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Foreword

It is only recently, since the emergence of the credit crisis, that stakeholders worldwide have started speaking in unison about the urgency of providing individuals with the tools they need to deal with everyday financial matters and make the right choices for their needs.

Work at the OECD on financial education began in 2003 when its member countries raised concerns over the adverse effects of low financial literacy levels. Over the past five years, the OECD financial education project has generated activities and results in three broad areas:

- Analysis: In 2005 the OECD published *Improving Financial Literacy: Analysis of Issues and Policies*. This publication was the first major study addressing the issue of financial education at the international level and recommending actions for policymakers to improve financial education and awareness. In 2008, the OECD released a second major publication on *Financial Education and Awareness on Insurance and Private Pensions* while also undertaking intensive research and analytical work on credit issues.

- Principles and good practices: Using its analytical work, the OECD has taken a leading role as a standard setter on financial education internationally. After issuing its Recommendations on Principles and Good Practices for Financial Education and Awareness in 2005 to guide policymakers in the design and implementation of effective financial education programmes, the OECD has released good practices in specific sectors such as private pensions and insurance. The OECD is currently finalising a set of good practices on credit while also finalising a policy handbook on risk awareness and education relative to natural catastrophes.

- International Co-operation: The OECD has launched in 2008 two major initiatives to promote international cooperation on financial education. The International Network on Financial Education, a group of international governmental experts, serves both as a forum for discussion and analysis on financial education and provides input to the OECD's financial education programme. The International Gateway for Financial Education is the first international clearinghouse for financial education. In addition, the OECD has organised a series of international financial education conferences, seminars and forums around the world (India and Moscow in 2006 and Istanbul in 2007).

Significant progress has been made in recent years to improve the financial literacy of consumers, but, for the OECD, many challenges remain, specifically in the areas of credit users' protection and awareness, the measurement of financial literacy level and financial education programmes' effectiveness, as well as the provision of financial education through schools. In response, the

OECD is committed to an extensive programme of work for the coming years overseen by two OECD Committees – the Committee on Financial Markets (CMF) and the Insurance and Private Pensions Committee (IPPC).

The organisation of a high-level international Conference on 7-8 May 2008 in partnership with the US Treasury, was particularly relevant and key in advancing the discussion on these very topical issues. The conference was also aimed at launching the OECD International Network on Financial education which held its first meeting back to back with the conference; as well as the International Gateway for Financial Education.

The conference hosted by the Organization of American States (OAS) in its headquarters, was attended by over 200 international leaders and experts from 43countries and economies around the world. Participants included, senior and high-level governmental officials, academics as well as representatives from international organisations (World Bank, International Monetary Fund and European Commission), industry and relevant NGOs.

OECD Deputy Secretary-General, Mr. Carlo Padoan, opened the conference, while the US Treasury's Secretary, Mr. Henry M. Paulson closed it. The programme included senior government officials as guest speakers: Minister of Finance of Canada, Mr. Jim Flaherty, FDIC vice-chairman Gruenberg and the US Treasurer Cabral. Other high-level speakers and moderators included heads of financial agencies, the Chairs of the OECD Committee on Financial Markets (CMF), and the Insurance and Private Pensions Committee (IPPC) and Working Party on Private Pensions as well as the US Ambassador to the OECD, Mr. Christopher Egan.

The conference programme addressed key topics such as, national strategies on financial education; effective and innovative tools; issues related to retirement savings; risk awareness and education on large-scale catastrophes; credit opportunities and challenges; as well as financial access, literacy and skills of youth and underserved groups.

This volume gathers the consultant reports on selected policy issues commissioned by the OECD to support the conference discussions. Topics include the evaluation of financial education programmes, financial education in schools, financial awareness and education in relation to pensions; risk awareness and education on natural catastrophes, as well as credit issues.

The OECD would particularly like to thank the office of Financial Education of the US Treasury for its fruitful and constructive co-operation in the organisation of this event and its follow-up, as well as the OAS and its staff for hosting the event. The OECD is also grateful to the authors of the reports contained in this volume for their valuable contributions and more generally to all the speakers and moderators for helping to make the conference a success. The views expressed here are the sole responsibility of the authors and do not necessarily reflect those of the OECD CMF, IPPC and WPPP, the Secretariat, the member or non-member countries. The publication has been prepared by Flore-Anne Messy with the assistance of Roman Winicki and Edward Smiley.

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The following document is available on line at *http://dx.doi.org/10.1787/514545567321*
Taking Financial Literacy to the Next Level: Important Challenges and Promising Solutions Proceedings of the OECD-US Treasury International Conference on Financial Education, 7-8 May 2008, Washington, D.C.

Part I – Tools and Programmes on Financial Education

Evaluating the Effectiveness of Financial Education Programmes

Alison O'Connell

Advisor, New Zealand Retirement Commission
and OECD Consultant

Policy makers in many countries are giving more attention to 'financial literacy' or 'financial capability', and there are many financial education programmes. The need to evaluate the effectiveness of these programmes is likely to increase. But little evaluation is currently taking place, and the evaluations made so far show mixed and inconclusive results. It is not clear whether this is a consequence of poor evaluation methods or poor programme design, or, that financial education works patchily. But it does mean that a positive impact from financial education has not been unambiguously proven; nor has a clear picture emerged of what works best and why. Evaluation of financial education is inherently difficult, and the impact of any one programme can probably never be fully isolated. Nevertheless, this paper suggests that evaluating the effectiveness of financial education can and should be improved. It begins to develop an approach to do so, including a Financial Education Evaluation (FEE) Framework which can be tailored for any programme in any country. This paper also suggests guidelines for governments and other public authorities to lead the way towards better evaluation of the benefits, costs and value for money of financial education.

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Introduction

This paper reviews what is being done around the world to measure the effectiveness of many different types of financial education. It takes a broad sweep through academic and policy-related literature world-wide, focusing on those countries where reports on financial education have been prominent.

The paper summarises the findings of some frequently cited evaluations and some newer studies. It shows the limitations of the evaluations made to date, in the context of the inherent difficulties in any evaluation of the effectiveness of financial education programmes.

Despite these difficulties, this paper takes the view that better evaluation is necessary and possible. It discusses the benefits of countries adopting a consistent, systematic framework to the evaluation of financial education programmes.

In the absence of a proven best practice methodology, the paper develops such a framework that could be used for any financial education programme, in any country. The paper concludes with proposing some guidelines for policy makers that could be developed into OECD principles of good practice on evaluating the effectiveness of financial education programmes.

This report is part of the OECD Financial Education Project that was initiated in 2003 in response to OECD government concerns over the possible adverse effects of low levels of financial literacy and financial education. In recent years, the OECD has become an international leader in the area of financial education, promoting the need for financial education and helping to set standards for it. The first major study of financial education at the international level was published in 2005. That report, "Improving Financial Literacy: Analysis of Issues and Policies," identified and analyzed financial literacy surveys in OECD member countries, highlighting the economic, demographic and policy changes that make financial education increasingly important. The report also described the various financial education programmes being offered in OECD countries, provided an assessment of their effectiveness, and suggested actions for policymakers to improve financial education. In 2005, OECD governments endorsed a set of Principles and Good Practices for Financial Education and Awareness. In current work, the OECD is conducting work on financial education in the context of pensions and insurance.

This paper builds on *Measuring the Effectiveness of Financial Education* by Alison O'Connell, a report commissioned and published by the Retirement Commission of New Zealand. The author is grateful for the permission of the Retirement Commission to develop the report for this OECD paper, and also acknowledges the reviewers of the original report whose comments have helped the development of this paper.

1. Defining financial literacy, capability and education

Financial education is a term commonly used across the world to refer to various methods used to increase an individual's financial knowledge. Some of these methods may not be considered as 'education' in the usual sense. Examples of 'financial education' include a retirement seminar in the

workplace, a budgeting workshop in the community or an information website, as well as a school curriculum.

A hierarchy of outcomes for participants in financial education programmes can be envisaged[1]:

- Participants improve their financial knowledge or skills and/or aspire to change their financial behaviour.
- Participants take some action or change their financial behaviour, for example, they join a retirement savings plan, or pay down some debt.
- Participants' personal financial positions improve.

The OECD definition of financial education makes it clear that the expected outcome includes every level of this hierarchy - changed behaviour as well as better developed skills – leading to greater financial well-being:

> *Financial education is the process by which financial consumers/investors improve their understanding of financial products and concepts and, through information, instruction and/or objective advice, develop the skills and confidence to become more aware of financial risks and opportunities, to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being*[2].

To sum up in one phrase what is intended to be the outcome of financial education, authorities in most countries would say improved **financial literacy**. The UK is unusual in using the term **financial capability**, which it defines with reference to a similar hierarchy of outcomes, as:

> *…a broad concept, encompassing people's knowledge and skills to understand their own financial circumstances, along with the motivation to take action*[3].

In practice, the distinction between the terms 'financial literacy' and 'financial capability' is rather cosmetic. All financial education programmes aim at the same ultimate goal: more people are able to make informed decisions in order to improve their financial well-being.

As will be illustrated later in this paper, the increase in financial well-being that should flow from better informed financial behaviour may be the ultimate goal of financial education in general, but improvement in skills or knowledge can be a valid goal of a specific financial education programme.

As 'financial education' is intended to help an individual make his or her own decisions, it does not include **financial advice**, which is to be the topic of a separate OECD paper. The term 'financial advice' is often used to describe a personalised, regulated product recommendation from a company selling such products. Such a specific recommendation would not be financial education. More generic financial advice, which leaves decisions and action with the individual but offers somewhat personalised guidance, may be classed as financial education[4].

Financial education programmes can be focused on one issue (for example budgeting, retirement planning, savings, home ownership or credit use) or can be more wide-ranging. But there is general agreement that financial literacy or capability is a broad concept - including the abilities of setting financial goals, budgeting, managing household cash flow, managing debt, saving and investing - because these are all linked in any individual's personal circumstances.

2. The increasing need for evaluation

Financial education programmes are getting more policy attention in many countries. It can therefore be expected that the need for evaluation of such programmes will increase.

Policy makers' increased interest in financial education can be explained by many drivers[5]. Financial understanding is thought to be low in many countries. Financial education is seen as a way of improving this and mitigating concerns that, for example:

- Many people do not participate in financial services, so are missing out on the benefits of doing so. For example, people without bank accounts may have to pay more to administer their utility bills.
- There are very high levels of household debt, and people generally do not understand how much it costs to service that debt.
- People do not understand financial basics well enough to deal with the complexities of increasing financial responsibilities, especially for retirement savings and university education, which used to be carried more by government.
- Where 'advice' is provided by financial services companies, it tends to focus on the products that are for sale, rather than personal finance more generally, and is only available to people who are in the market for those products.

Some commentators suggest that governments have a moral obligation to pay more attention to financial education because of policies shifting financial decision-making onto the individual[6]. For example, in two countries where auto-enrolment to national retirement savings plans has been or will be introduced – New Zealand and the UK – governments explicitly recognised that financial education should be stepped up as part of the package[7].

Governments or government agencies are developing national strategies for financial literacy in the US, UK, New Zealand and Australia. Other countries, including Canada, France, Japan, Ireland and Singapore, offer information of varying subject matter and depth to help people understand personal financial issues.

Financial education programmes are not only sponsored by governments. Much of the academic literature from the US and Canada covers the recent growth in programmes run by local, university, employer and other communities[8]. A survey for the European Commission found 180 programmes in 27 Member States, covering a wide range of content and objective, run by various types of agencies including adult literacy agencies, social workers, financial industry federations, microfinance organisations, housing authorities and others[9].

Two recent examples indicate the expectation that, with so much government, private sector and not-for-profit attention and funding going towards financial education, the question "Is financial education effective?" will be asked more frequently:

- The UK's National Audit Office (NAO), in its review of the plans of the Financial Services Authority (FSA) to spend around 120 million between

2006 and 2011 on projects aimed at improving financial capability, said that the FSA should set measurable goals for improvements in consumer behaviour and outcomes against which success can be judged[10].

- The USA's Government Accountability Office (GAO), in its review of the Financial Literacy and Education Commission, said that it should incorporate into the national strategy additional elements to help measure results and ensure accountability… clear, specific goals and performance measures that would serve as indicators of the nation's progress in improving financial literacy and benchmarks for what the Commission sets out to achieve[11].

Given the growing interest in and importance of financial education around the world, evaluation of its effectiveness can be expected to be increasingly analysed in order to:

- **Understand what worked best.** It is important to know what impact any one financial education initiative has had in order to fine-tune that initiative. Better understanding of which methods, content and circumstances help people to develop financial literacy most effectively will also help to suggest new initiatives.
- **Assess how effective financial education could be.** The accumulation of knowledge about what, and how much, impact different types of financial education initiatives have had will help to set realistic expectations for the possible impact from new programmes: both individual initiatives and national financial education programmes.
- **Set the value for money from financial education alongside that of other policies.** Governments and other funding agents will want to compare what measurable benefits they can expect from financial education to the costs of providing it. Policy makers may wish to compare the value-for-money equation with that of other policies. For example, in the case of retirement saving, an understanding of the different costs and impacts on saving levels of auto-enrolment initiatives, tax incentives and financial education should help develop an appropriate mix of policies.

Attempts to answer the question "Is financial education effective?" are fairly new, and take different approaches, as the next chapter discusses.

3. The types of evaluations made

Despite the need to understand the value-for-money from financial education, there is little evaluation of financial education programmes currently taking place[12].

This paper reviews some evaluations, selected for being either prominent in the countries of interest, most often cited in the literature, or new. Together, these examples illustrate the existing methods used to evaluate financial education programmes.

The selected evaluations are categorised into three types, showing three possible different ways to answer the question "Is financial education

effective?" Three tables in the Appendix detail the evaluations reviewed of each type.

- First, there is **evaluation built in to specific financial education programmes** (Table 1). These evaluations are generally made in order to identify how successful a particular programme has been. For example, studies have evaluated whether students who took a high school curriculum in finance scored higher on a financial test than those that did not, or whether people attending a retirement seminar saved more as a result.

- Second, there is the **evaluation of what impact financial education has had on the financial capability levels of a national population** (Table 2). In 2005, the OECD identified fifteen countries that either had already or were planning surveys to measure levels of financial understanding[13], but some of these covered one segment only rather than a national population (and in this paper would be covered in Table 1). Survey methodology varies: some are subjective assessments of financial attitudes; others provide more objective tests of financial literacy[14]. Table 2 describes the national population surveys of financial literacy in Australia, New Zealand and the UK which are examples from the more objective end of the spectrum. Time series of such surveys are not yet available, so no inference can be drawn on how financial education might improve population literacy levels.

- Third, there is **evaluation of past experiments** (Table 3). This is the approach taken by most academic papers on the subject, which have been written mainly in the US. These experiments may have been set up for other purposes, but the data collected have proved convenient for researching the impact of financial education. In these studies, various associations are explored between having had some form of financial education and, for example, financial understanding (measured by correctly answering financial questions) or financial behaviour (measured by the rate at which people are saving or their accumulated net worth). This type of analysis asks, in general terms, how effective financial education can be.

As well as summarising the key findings of each example, the tables comment on the strengths and weaknesses of the evaluation methodology. A number of the weaknesses identified are commented on by the researchers themselves. Understanding more about these weaknesses is important to:

- Improve our knowledge of how best to evaluate financial education programmes, and,

- Be clear about what can be deduced from each study. This is particularly important as the few positive studies that exist are sometimes quoted without critical review of whether wider application of the apparent findings is justified.

The next chapter summarises the findings of these evaluations, taking into account the limitations caused by any weakness of methodology.

4. Key findings from evaluations so far

This chapter explores further what can be deduced, or not, from the key findings of the evaluations of financial education summarised in the tables of the Appendix. The overall picture, confirmed by other commentators[15], is that the evaluations so far have shown mixed and inconclusive results.

The studies and commentaries on them seem to agree that, in most populations studied:

- There is a low level of financial understanding, with the implication that it can be improved.
- Financial knowledge or capability is associated with higher age (although is lower in the oldest age group), education, income and wealth.
- People scoring highly on financial knowledge are probably more likely to be those doing the 'right' things to manage their finances.
- The success that workplace financial education (such as seminars) has had towards the targeted goal of increasing saving in a workplace retirement plan has so far been demonstrated more convincingly than that of schools education in improving financial literacy.

However, looking at the body of evidence, contradictions and unresolved questions appear. For example:

- It is not always the case that financial education is associated with the 'right' financial behaviour or good financial literacy. For example, both the Jump$tart and Bernheim studies evaluate the result of financial education in US High Schools at different times and in different ways. The Bernheim study suggests personal financial education in schools results in higher savings later in life. Mandell, from the Jump$tart studies, could not find evidence that thrift is systematically related to financial literacy, or that financial education improves thrift or decision-making around personal finances[16].
- **No study has proved education causes better financial literacy or better financial behaviour**[17]. For example, while the NEFE studies found two cohorts of students scored better on a short test after studying the personal finance curriculum, it is not known whether similar cohorts would also have scored better without studying the curriculum, or if they studied a different one. Hilgert *et al.* find correlations between having financial knowledge and financial practices, but point out that the causality could flow either way, or in both directions, or there could be a third unexplained factor at work. For example, it is not necessarily the case that having learned about equities through a financial education initiative you are then more likely to invest in them. It could be that having invested in some, you are then more likely to answer in a survey that you think you know about them.
- I**t is not clear how the benefits of improved financial literacy vary across the income distribution.** For example, Lusardi found that the positive effect of retirement seminars on financial wealth decreased steadily moving to higher quartiles of wealth[18]. But the most affluent

students have led the recent improvement in financial literacy in the Jump$tart initiative[19].

- **The interplay of factors other than financial education that may also affect financial behaviour is not well understood.** For example, attending retirement seminars appears to increase financial wealth but then other things are just as much associated with higher wealth, for example, going to college or not smoking[20] (which perhaps is an indicator of planning for longevity). Policy initiatives to improve education or longevity awareness could compete with financial education for increased government funding.

- **Financial education may sometimes act in undesirable ways**, or, at least, in ways that conventional financial wisdom would suggest is undesirable. For example, Mandell reports that students seem to get more from financial education if they have participated in a stock market game[21]. But then they say they would not be thrifty, perhaps because they think they can rely on stock investments. People who have learned enough to try to avoid possible mistakes may still make others, for example, they may under-invest in equities because they over-worry about the risk[22]. After the TIAA-CREF seminars, almost 7% of people with a goal of retiring at age 65 said they would increase that age target, but over 7% said they would lower it[23].

- **Not enough is known about successful programmes to be able to predict the same success elsewhere.** For example, the Bernheim study suggests that those having undergone compulsory consumer education in US High School were better off later in life by a year's earnings on average than those without. The data stems from a survey in 1995 of self-reported saving behaviour of individuals who should have received some form of consumer education at school. However, the type of education varied, and it did not always cover the personal finance topics that are now envisaged as being part of financial education. So the study suggests that some kind of 'financial education' in schools can increase saving, but it does not suggest that any financial education would increase saving to the same extent if it were introduced in other countries. Such an interpretation would gloss over exactly what the education covered, how it was done, and what other factors might make for a different impact in other circumstances.

In addition, many of the studies fall short of due statistical rigour. This cast some doubt on the robustness of apparent findings from some studies, or at least their wider applicability. Often these problems arise because of real practical difficulties in evaluating financial education. Common problems include:

- Low response rates to surveys, particularly those run some time after the education.

- Some potential bias in how the respondents were recruited.

- Insufficient evidence linking the education and its apparent impact; outcomes not compared between those who did and those who did not have the financial education being evaluated.

In summary, the results of studies attempting to evaluate the effectiveness of financial education vary. There is much we do not know about the effectiveness of financial education. A positive impact from financial education has not been unambiguously proven in all cases; nor has a clear picture emerged of what works best and why. The inconclusive results could be a consequence of poor evaluation methods or poor programme design, or it could be that financial education works patchily in ways that we do not yet understand.

The positive results give much cause for optimism that financial education is a good thing. However, the state of evaluation of financial education programmes is such that we do not yet understand what works for whom in what circumstances, or how or why it works. Therefore, we do not have a clear idea of what positive impact from financial education can be expected.

There is thus a case for improving the evaluation of financial education programmes. However, evaluating the effectiveness of financial education is not easy. The next chapter considers the inherent difficulties in such evaluation.

5. The inherent difficulties in evaluating financial education

It is not surprising that there has been little conclusive evaluation of the effectiveness of financial education. It is not easy to do well.

This chapter considers four inherent difficulties with evaluating financial education programmes. In summary:

- There will often be issues with the integrity of the data collected to evaluate financial education programmes.
- There are practical difficulties in collecting the data and organising evaluation.
- The impact of a specific financial education programme cannot be isolated from all the other factors that could have had an impact on financial literacy or financial behaviour over time.
- There are no benchmarks to provide a context by which any measured impact of a financial education programme can be interpreted.

Data integrity

Inevitably, most data is collected through telephone surveys or face-to-face interviews with people about their personal finances. Such data has well-known difficulties:

- The data may be limited or biased. Some people will not divulge personal financial information, so people taking part in any survey form a self-selected group. Many studies using personal financial data (including the effectiveness of auto-enrolment) look only at individuals' holdings in one product or with one institution, so are unable to identify, for instance, even if 401(k) saving went up, whether other household saving went down[24]. And because individuals' retirement holdings are often complicated, some of the studies construct artificial measures, often

excluding such vital items as state pension entitlement and some employer pensions.

- **Most of the data is collected from people self-reporting their own financial understanding, capability or behaviour**, without actual observations to prove that they do what they say they do. People are not always accurate about financial matters. For example, in the Australian baseline survey of financial literacy, 67% said they have an understanding of compound interest but only 28% actually answered a question on it correctly[25]. Baseline surveys all over the world are interpreted as showing low levels of financial literacy, so we have to be cautious about what people say about their finances.

- **Data collected is not relevant or not comparable.** The 'right' answers to some financial literacy tests can seem trivial or misleading[26]. Different data is collected in different surveys, although it may sound as though they are investigating the same issue. For example, when investigating levels of financial literacy in relation to compound interest, one approach that has been used is to ask respondents to do a calculation of how much would be in a savings account after two years given an interest rate[27]. In another study by the same authors published in the same year, an easier multiple-choice question was used[28]. Another approach that has been used is to find out what facts people know on the subject: what the difference is between simple and compound interest[29]. Experience has not yet determined which questions would be the most appropriate measure of financial literacy.

Practical difficulties

Collecting financial education evaluation data is often time consuming, costly and difficult. For example, over 5,300 interviews for the baseline capability study for the Financial Services Authority (FSA) in the UK took on average 42 minutes each, and some took just over an hour[30]. The interview questionnaire was developed using the results of initial detailed work one year earlier based on focus groups and in-depth interviews[31].

Because it is a significant exercise, evaluation is a specialist skill. Lyons *et al.* (2005) found that evaluation was considered difficult by the US community-based financial education practitioners interviewed and many of the educators felt they lacked the knowledge or time to do it well. Evaluation was often an afterthought, without sufficient management attention or strategic thinking being applied. The authors concluded that *the basic problem is that the development of the evaluation component often falls to financial educators unfamiliar with evaluation methods*[32].

Isolating the impact of a specific programme

Even with a well-conducted survey, interpreting the results is not easy. The challenge lies in isolating the long-term impact of any specific financial education intervention[33], a task made difficult by the inherent nature of personal finances.

- **Financial education programmes vary.** A study looking at people who said they had attended a retirement seminar at some point in their

career puts under the one heading of 'retirement seminar' many different types of teaching methods, subject matter and quality of material. Communities initiating financial education programmes have naturally tailored them to their particular priorities, so the studies investigating such programmes group together different content. This can be useful to compare which variations worked better than others[34]. However, there has not been enough evaluation of different features of financial education programmes to compare relative impacts of single interventions consistently[35], or to understand degrees of difference, for example, whether short programmes work better than longer ones; whether targeted content works better than general subjects, or which method of delivery is more effective.

- **No financial education programme actually works in isolation.** For example, the evaluators of the pfeg schools programmes in the UK concluded that they could not be confident about the general effectiveness of pupils' personal finance learning because pupils' financial experiences outside school are very powerful and the folklore is bolstered by the activities and discussions of family and friends…[36]. Seemingly small encouragements from within a social network can make a relatively significant impact[37]. Financial education may not work immediately, but take time, during which people are exposed to the powerful influences of family, friends, changes in life situation and legislative or tax changes. We do not know how all these other possible influences complement or compete with financial education initiatives.

- **There is inherent, and unexplained, variation in individuals' financial behaviour.** People appear more likely to say that they will make a change after financial education than they are actually to make a change[38]. People make seemingly irrational financial decisions, even when presented with advice on what would be the best thing to do[39]. In research carried out for the FSA in the UK[40], the team found interviewees themselves commented that what mattered was using financial knowledge, not just having it. Interviewees referred to 'X-factors' or personality characteristics that affected what people did around money, for example, whether they were organised or prepared to assert their rights. The interviewees had different views about what determined these personality traits. Traditional economic theory does not explain the reasons for variation in financial behaviours, and newer behavioural economics does not yet complete the puzzle[41]. So different people will act in different ways after financial education, and separating out how the education itself makes an impact will always be difficult.

Putting the impact in context

Even if the effect of a specific programme could be isolated, there is then the difficulty of comparing it to what it should be. There are many different desirable outcomes that financial education could have, and the evaluation studies made so far consider a variety of measures. It is then difficult to put the results in a critical context of what can be expected from financial education.

- **Evaluations measure a variety of outcomes.** There is a long list of what evaluators of financial education might be interested in. For example:
  - More people have financial education ('usage').
  - Participants felt they learned something from the education ('satisfaction').
  - The level of financial knowledge, or capability, or confidence, of financial education participants increases.
  - Participants change their attitudes towards finances for the better, *e.g.*, become thriftier.
  - Participants take the specific action that the programme is designed around *e.g.*, make more retirement savings or pay down debt.
  - Participants take action to improve their personal financial situation overall, *e.g.*, appropriately balance saving with paying down debt.
  - As a result of changed behaviour, participants' financial well-being (or 'socio-economic position') improves.
  - Macro-economic indicators improve *e.g.*, economic growth is stimulated as more people save more.
  - The financial market becomes more efficient as more financially literate consumers demand a better deal from product providers.

The aims at the top of this list - improving participation in financial education programmes, financial knowledge and attitudes - tend to get measured more often than those in the middle and bottom of the list, to do with individual behaviour or macro-economic impact. For example, a survey of over 260 US community-based programmes reported 76% evaluating changes in knowledge, but only 15% measuring individual socio-economic changes[42].

A recent survey of the leading six models of nationally-provided financial education (information or guidance via website or call centre) asked specifically about evaluation[43]. Usage statistics were reported for each, but for some this was a total figure, with information by demographic group unavailable. Reports on the impact of the education on participants' financial behaviour were available for only one of the examples.

The different frequency of evaluation measures may simply reflect that measuring improvements in financial behaviour or overall financial well-being is more difficult than measuring improvements in financial knowledge or attitudes[44]:

- A survey which asks 'How much do you think you know about interest rates?' is easier to carry out than one which asks for data on how much an individual has on credit cards or in loans.
- Identifying the 'right' financial action is debatable. If a financial education programme has a single aim (say, to increase savings in an employer-sponsored vehicle) can it be said to be a success for an individual employee if he or she does increase contributions but affords that greater saving by getting more into debt? If the increasing

debt is not measured, the apparent effectiveness of the education may hide that the household is in a worse position overall.

– As discussed earlier, economic models of consumer behaviour cannot fully explain how individuals actually behave as regards money, so it is hard to identify that people are taking the 'right' or 'wrong' financial action for them. Personal financial decisions involve so many variables, many subjective. One family could decide on the right balance between debt repayment/spending/short-or long-term saving differently from another, with each being valid for that family's circumstances and attitudes.

The varied commitment to evaluation may also reflect that many financial education programmes have started because of a general feeling that it must be a good thing, with a desire to reach as many people as possible on a limited budget, but without a specific goal well-defined. Precisely what the financial education has been trying to achieve and how this should be measured have received less attention.

In the evaluation of any type of programme, participation and satisfaction are important measures. But there is a strong case for increasing the emphasis on evaluating how people actually change their financial behaviour as a result of financial education and whether that leads to better financial well-being.

– As discussed in chapter 1, there is a general consensus around the OECD view that the aims of financial education should include taking more effective actions as well as better financial understanding.

– As discussed in chapter 4, causality from better financial understanding to making the right financial decisions is not proven, so it may not be enough to assume that improving financial understanding will lead to a better financial position.

– As the experience from the FSA research team in the UK suggests, people understand that better capabilities and knowledge are not necessarily enough to improve personal finances – it is action that makes the difference.

- **There are no benchmarks for what should be expected on any measure for any population.** In any of the evaluations of financial education, or commentary of them, there has been no debate on what the appropriate level or amount on each measure should be. For example:

  – How many people should be able to answer a question on compound interest, or understand a superannuation statement, given the general levels of numeracy and literacy in the population?

  – In a survey of a population with a particular income distribution and cost of living, what proportion of people can be expected to have spent all their income at the end of the month?

  – What balance between debt and savings would constitute success for a financial education programme, or is it sufficient just to see an increase in saving and a reduction in debt?

  – Assuming the goal of financial education is to improve these figures, what improvements are feasible?

– What is the 'normal' proportion of people who, when surveyed after a seminar, say they plan to take action on what the seminar was about – and then how many actually do?

To get some idea of likely improvements it would be useful to compare data between populations, but the available data is piecemeal and far from being standardised.

In summary, because of the practical, theoretical and conceptual difficulties of evaluating financial education programmes, it is unlikely that evaluation will ever be able to quantify absolutely the impact of financial education. After all, the effects of different approaches to general education or of public health or safety campaigns are debated, with specific impacts hard to isolate.

However, given the increasing attention and funding now being given to financial education, it can only be expected that the need to get a better answer to the question "Is financial education effective?" will increase. Both the quantity and quality of financial education evaluations could be improved. The next chapter considers the benefits of improving the evaluation of financial education. Subsequent chapters suggest how it can be done.

6. The benefits of a systematic approach to evaluating financial education

This paper has suggested that good measurement of the effectiveness of financial education initiatives is necessary in order to understand what could work and to assess the potential impact of financial education and its value for money. However, evaluation of financial education programmes is difficult, only recently being seen as important, and with few good examples available.

Other commentators agree. For example, Fox *et al.* (2005) suggest that:

An overarching framework for the evaluation of financial education programs would provide a guide or road map for collecting information about program development, delivery, effectiveness, and accountability. Widespread adoption of key elements in a common framework will not only make program evaluation less daunting for financial educators, by providing a guide and frame of reference, but also contribute to consistency in data collection and clarity and program comparison[45].

Many of the difficulties with evaluating the impact of financial education should become easier if there were such a framework: a systematic approach to evaluation that could be followed by any financial education initiative in any country. The benefits of using such a framework should include the following[46]:

- **Save 'reinventing the wheel'.** A framework should provide a useful start to practitioners who may not be experts in evaluation.
- **Provide the external discipline of considering carefully what the financial education is intended to achieve.** The application of a framework should require clarity on what the financial education programme to be evaluated aims to teach people or how it aims to change behaviour. This should temper any tendency to assume that any financial education must be a 'good thing', and instead make the intended objective of the programme a point to consider at outset.

- **Provide a consistent database of benchmarks.** Consistently applying the same framework across initiatives in different countries would mean that robust evidence is available when the value-for-money questions are asked. The evidence base should help keep the attention of policy makers and funding agents[47].

At the very least, most financial education programmes would generally evaluate participants' satisfaction with the programme. But, as discussed earlier, there are a number of levels of impact for individual participants that could be measured. Difficulty in data gathering increases as relevance increases[48]:

- The extent to which participants improve their financial knowledge, skills and/or aspiration to change financial behaviour.
- The extent to which participants actually change their financial behaviour.
- The economic benefits to participants as a result of their actions.

There may also be the aspiration that societal or macro-economic benefits on a wider scale accrue from the accumulation of individual participants' improved financial literacy.

Ideally, any framework to be used as the basis of evaluating a financial education programme should be designed to allow appropriate balance between difficulty and relevance. This would require the framework to:

- **Be practical and realistic.** As the difficulties of isolating the impact of financial education and other issues with evaluation show, there may be some suspected benefits of financial education that cannot be proven absolutely. This should not be used as an argument not to evaluate. Doing better evaluation of financial education programmes will improve the current understanding of what helps people make good financial decisions. Any framework should be able to be used flexibly, making decisions on the right balance between what can be usefully and practically evaluated and what is relevant in each case.
- **Allow tailoring within a standard.** The framework should be able to be used for any financial education programme in any country. Individual programmes or sites within a programme (such as individual schools) should be able to tailor their evaluation as they tailor their financial education programme. But, even if the use of the framework is tailored for each use, working within a consistent standard should mean that comparisons across programmes are still valid. The most and least effective practices - within a programme or between different national or international programmes - would then be identified on consistent measures. The comparison would suggest ideas for how to improve those initiatives performing less well, and to what benchmark level it is realistic to expect improvements.
- **Be able to be applied to evaluate other financial well-being initiatives.** Ideally, this could help to compare the effectiveness of different initiatives or policies. For example, it could help to develop a better picture of the relative value-for-money of different financial education

programmes, or even of the cost/benefit of financial education as compared to, say, that of tax incentives and auto-enrolment.

Using such a framework should, therefore, help to improve the rigour of evaluation and its interpretation and to share best practices for effective financial education. It should help an individual programme to be assessed on its impact against its own objective, including whether it is giving value for money, and what could be done to improve it. And the accumulated evidence from consistently rigorous evaluations should help to answer the more general questions of "What could work?" and "How effective can financial education be?"

The next chapter develops a framework that could be used for any programme in any country.

7. Developing a framework for evaluating financial education

The last chapter discussed the benefits of financial education programmes using a consistent, systematic framework for evaluation. As there are so few evaluations currently available, there is no proven best practice methodology, and no proven framework exists. However, a framework has been suggested in the academic literature, and this paper develops this suggestion into a practical set of guidelines that could be used for any financial education programme, in any country.

Fox *et al.* (2005) suggest that a number of similar program evaluation frameworks exist and offer one from which to develop a comprehensive, standard framework for evaluating financial education programmes. Box 1 contains a slight adaptation of this suggestion, highlighting some of the important issues for financial education as discussed in this paper.

This Financial Education Evaluation (FEE) Framework could be applied to the evaluation of a specific programme or series of initiatives; the type of evaluations seen in Tables 1 and 2 in the Appendix. It could also be used as a 'checklist' by which to critically assess, or help develop, the historic analyses covered in Table 3.

Tailoring the FEE Framework

The FEE Framework provides the discipline to think through what it is relevant and important for any particular programme. Each tier should at least be considered for each programme to be evaluated, preferably while the programme is being designed, and choices can be made about exactly what to measure. A suggested approach for any one programme to tailor the use of the FEE Framework is:

1. Follow the FEE Framework, preferably at the design stage of the programme, to identify all the goals of the exercise, all the questions of effectiveness that it might be desirable to ask, and ideal methods and measures for each.
2. Consider the potential value of the ideal evaluation: given the practical and other challenges that will put caveats on the interpretation of the results, what lessons for improving the effectiveness of future

programmes will actually be able to be learned and how widely will the results be able to be used?

Balance the cost, difficulty, relevance and value of the possible evaluation methods and measures to decide on the approach to be taken.

Box 1.[49] Financial Education Evaluation (FEE) Framework

Need: What objectives does the programme try to meet? Is it to improve financial knowledge, skills or attitudes (generally or in specific ways), and/or to encourage a specific behaviour such as saving more in a retirement scheme or paying down debt? The hierarchy of impacts on individual participants should be considered here. Is the programme focused on a well-defined small group (*e.g.*, employees of an organisation) or at a national population? Are there groups within the population that have different needs?

Accountability: How much is the programme used and how much does it cost? This answers the money side of the value-for-money question. The numbers attending a seminar or using a website would be measured, and cost per unit could be tracked and compared to other initiatives.

Fine-tuning: How could the programme be improved? This basic question focuses particularly on delivery and at the very least it can use satisfaction surveys to help determine how well the participants and administrators rate delivery. More detailed analysis would link the assessment of different ways of delivering the education to impact measures. This would help to understand, for example in a schools programme, why and how some schools achieve better impact and so suggest ways in which the delivery in schools not doing so well can be improved.

Micro Impact: How effective is the programme against its objectives? This goes back to what the programme specifically set out to do (in 'Needs', the first tier) and sees how successful it is on those points. A clear list of programme objectives should directly suggest a list of measures, and a timeframe for achievement of these targets will need to be decided. Some measures may be difficult or too costly to use, requiring the programme administrators to make some hard decisions. This is where there may be a risk of substituting the easy-to-measure knowledge improvements for the harder-to-measure actual behaviour change. Measurement in this tier should help to answer the benefit side of the value-for-money question.

Macro Impact: What impact is the programme having relative to the big policy picture, and compared to other possible initiatives? This is where measurement of the impact on the bigger macro issues is attempted, again, depending on the original programme objectives. While national capability strategies may have such macro-impacts as their goal, community-based projects may not need to have any measurements in this tier. A government could use measurements in this tier to compare the impact and value for money from a financial education programme to that of other initiatives.

Choices can be made within each tier. In tier 4, impact can be chosen to be assessed by measuring the change in participants' financial knowledge, skills and aspiration to change financial behaviour, and/or participants' actual behaviour changes, and/or the individual economic results of change. Tier 5, the accumulation of these individual impacts to wider relevance, may be irrelevant for some programmes. For example:

- A budgeting workshop in the community may not expect to be able to recruit enough responses for a follow up survey on behaviour change over time, so may have to concentrate on immediate post-workshop

changes in knowledge, skills and attitudes, and plans to alter behaviour, perhaps using a self-reporting questionnaire. This could be used to answer the question "What immediate impact did these workshops have on whose intentions to budget?"

- An employer running a seminar programme for employees may only be interested in boosting participation in the workplace retirement savings scheme. The programme managers could choose to measure only the change in contributions made to the scheme, isolating as far as possible the changes as a result of the seminars. The access to records of scheme contributions may make it possible to examine actual savings behaviour over a longer time frame than just immediately post-seminar. But this approach would not identify other changes in the household to afford increased contributions, or the possible wider benefits of financial education, for example, better understanding of investment choices. The evaluation should help programme managers answer the question "What worked in these circumstances to increase whose retirement savings contributions?" but would not shed light on "What impact do retirement seminars have on household finances overall?"

- Governments funding a large scale public financial education initiative would be expected to use comprehensive and robust measures up to and including tier 5 of the framework. For example, the potential economic benefits of a suggested new national 'Money Guidance' service in the UK were estimated using "what if?" assumptions on changes in consumer behaviour and resulting macro-economic effects[50]. Consumer benefits from using the service were assumed to stem from resulting improvements in the way individuals budgeted, managed debt and shopped around, and from more investment in pensions and other products. Macro-economic benefits were estimated, including items such as increased tax receipts from savings products and reduced absenteeism (from work, as financial stress declines). Evaluations of the service once it starts would therefore be expected to assess actual progress on these measures, compared to the assumptions made. The actions of individuals using the service will need to be identified (and imputed to using the service) and the actual economic benefits for individual participants and the macro-economic impact of the new activity estimated. This may be in addition to tracking the financial literacy levels of the population using national surveys.

Balancing what is practical and rigorous

Using the FEE Framework, evaluators will reach a point when they know what impacts they want to test, but still have to make practical decisions about, for example, how to recruit respondents, what medium to use for a survey, what words to use in the questions. The aim may be to strive for what is often considered the 'gold standard' of randomised controlled trials, but for some studies achieving this may be unaffordable or impractical. Some evaluations may aim for a softer or qualitative discussion of issues arising from the programme, without attempting a fully statistically rigorous analysis of results.

Therefore, there will be a balance between what is affordable and practical and what, in the context of the aims of the programme, will provide the best statistical rigour – to avoid as far as possible the common problems of low

response rate, bias, insufficient attribution of impact to the education, and over-reliance on self-reports.

There may also be ethical protocols to protect the rights of participants.

As with any type of evaluation outside help can be used, where budget allows, to provide expertise and rigour. For example:

- Previous evaluations of financial education, such as those listed in the Appendix to this paper, (and the references contained in them) can be examined for suggestions and learning, with appropriate review of their strengths and weaknesses in evaluation methodology.
- One example of specific resources applicable to some financial education programmes is provided by NEFE in the US[51]. Once evaluators (of one-on-one counselling programmes, seminars or workshops) have decided what questions they want to be answered, and have decided to use participant questionnaires, they can create survey material by choosing from templates of question wording from the NEFE manual.
- Wider reading of example rigorously evaluated programmes or advice on best practice evaluations in other areas, such as general education or public health, may offer ideas[52].

Examples of using the FEE Framework

Using the approach suggested by the FEE Framework, different programmes would have different sets of measures and use different methods to collect the data relevant and useful to them. Table 1 suggests some measures and methods in each tier for two example programmes: a series of budgeting workshops held in local communities and a national education programme designed to improve the levels of financial understanding in the population.

Table 1 should not be read as a template for either of these programmes or any other. This paper assumes that the managers of any programme would think through the FEE Framework to determine what evaluation is appropriate for their specific situation, and the table shows some examples to help spark some ideas for that process. Further ideas can be obtained by reading some of the studies discussed in earlier tables and other papers reviewed for this report.

Table 1 illustrates that the FEE Framework can be practical and realistic for small-scale programmes as well as applying to large-scale policy-driven programmes. It can therefore be used as the basis to approaching evaluation of any financial education programme, in any country.

Table 1. Examples of how the FEE Framework could be applied

Example 1: Workshops held in local communities to improve budgeting skills			
	Possible measures	Example methods	Actions, comments
Need	Level of debts outstanding, credit card usage, compared to other communities of similar financial profile. How much any current budgeting programmes are used, by whom, and with what perceived success or problems.	Collect statistics from survey of individuals and/or total statistics *e.g.*, from financial providers, national statistics. Interview local people, community leaders, financial providers. Review local press for issues.	Use information to identify priorities and decide on the objective(s) of the proposed workshop programme *e.g.*, X% more households develop budget plans? Y% of households carry out better day-to-day budgeting? Average household debt in the community reduces by Z%? Make definitions precise so that these items can be measured. Estimate unprompted demand for the programme and potential demand for all 'in need' to put a feasible range on X, Y, Z (benchmark from studies in other locations if available). Detail target participant demographic profile as much as possible *e.g.*, by income group or other indicator of being 'in need' of budgeting skills.
Account-ability	Actual participant numbers and profile. Response rate to invitations to attend course for each type of invitation, for each workshop. Starting numbers and level of drop outs, for each workshop. Total cost per participant and per location.	Programme managers collect statistics on invitation response, attendance and drop-out. Workshop costs itemised where spent on a standard form so total costs are consistent.	Measurement of usage can be tracked against expected demand and profile from 'Need' as workshops continue. Profile most successful invitation method. Profile most successful workshop attendance rate. Method of costing and allocation per participant to be agreed with funding agent before programme starts (*e.g.* Are development costs treated separately from delivery costs? How should volunteer time be counted?). Costing approach may need to be standardised with other initiatives if a comparison between them is sought.
Fine-tuning	Participant, workshop leader and programme manager ratings of satisfaction with programme operation.	Use feedback survey questionnaires on satisfaction; ideas for improvement.	Compare actual usage and satisfaction against expectations in 'Need' (*e.g.* Are the target group participating as hoped?). Adjust invitation and delivery methods as patterns of most successful approaches emerges (a 'formative' evaluation[53]). Document adjustments so that evaluation can be linked back to different delivery methods.
Micro Impact	Aim to measure items as decided in 'Need' – Number of households with a budget plan? Number of households reporting they are budgeting better? Level of household debt? - baseline before programme and afterwards. Aim to identify any specific behaviour change made as a result of the programme.	Carry out surveys and/or interview participants before and immediately after the programme, and, say, 3 months later. Confirm self-reported data with direct observation where possible *e.g.*, review (anonymised) bank statements of a sub-sample, read budgeting plans.	Total data for a 'summative' evaluation of the programme's achievements over a specified time period(s) (or sections of programme by *e.g.*, locality or delivery method). If a control group can be readily identified - *e.g.*, those not responding to an invitation to join workshops - collect same financial data for comparison with that of workshop participants. Analyse results by demographic profile to identify those groups who benefited most, compare with target group.
Macro Impact	Benefits to participants beyond financial. Wider impact of attending workshops *e.g.*, greater financial awareness/ interest, passing on of knowledge to family and friends.	Carry out surveys and interviews as above.	Use anecdotes to complement the data analysis in the evaluation report.

Table 1. Examples of how the FEE Framework could be applied *(continued)*

Example 2: A national education programme to improve financial understanding of the population			
	Possible measures	Example methods	Actions, comments
Need	List of 'problem' areas from financial household and macro-economic data *e.g.*, levels of debt, household saving. Ways in which people currently gain financial understanding. What financial education programmes are in place, with what results.	Review national statistics, academic and research literature. Gather benchmarks from other countries. Hold focus groups or interviews with individuals, community groups, financial providers, financial education providers. Understand levels of general numeracy and literacy in the population.	Use information to identify priorities and decide on the objective(s) of the proposed education programme *e.g.*, Average levels of financial knowledge, capability and/or confidence increase by A%? Average levels of saving increased by B%, and/or debt reduced by C%? Overall financial situation of D% of households better off overall? Positive action on finances taken by E% of individuals? Make definitions precise so that these items can be measured *e.g.*, define which actions. Review benchmarks from other countries in context of local general education levels and demand for the programme to put a feasible range on A-E. Detail target participant demographic profile as much as possible. Consider also the macro-economic benefits that would ideally be identified as flowing from the financial education programme.
Account ability	Actual participant numbers and profile for each module within programme*. Participants as a percentage of appropriate section of population *e.g.*, employed adults or students. Total cost per participant for each module. * Modules in a national programme could be, for example, a website, a school curriculum, employment-based seminars, or national advertising.	How usage statistics are collected will depend on module *e.g.*, number of classes or seminars and participant numbers counted by managers; number of unique visitors to a website counted by software; surveys for recall of advertising or usage of brochures. Costs itemised where spent on a standard form so total costs are as consistent as possible.	Measurement of usage can be tracked against expected demand and profile from 'Need'. Method of costing and allocation per participant to be agreed with funding agent(s) before programme starts (*e.g.* Are development costs treated separately from delivery costs? How should shared costs be allocated between modules?). Costing approach will need to be standardised between the modules and with other initiatives if costs are to be compared.
Fine-tuning	Participant and manager ratings of satisfaction with each module.	Use feedback survey questionnaires on satisfaction; ideas for improvement.	Compare actual usage and satisfaction against expectations in 'Need' (*e.g.* Are the target group participating as hoped?). Adjust delivery methods if undertaking formative evaluation. Document adjustments so that evaluation can be linked back to the relevant delivery method.
Micro Impact	For each item decided in 'Need' – *e.g.*, Average level of financial knowledge in the population - decide whether to track change over time, inferring the impact of the programme; and/or, whether to aim to identify specific impact of each module. Where possible, aim to identify any specific behaviour change made as a result of the programme.	Undertake national surveys where feasible, regularly if tracking items. Use smaller surveys and/or interview a sample of participants immediately before and after each module, and, say, 3 months later to identify specific impacts. Confirm self-reported data with direct observation where possible.	Total data for a 'summative' evaluation of a module's achievements over a specified time period(s). If evaluation is being carried out regularly, use objective measures that can be repeated. If a control group can be readily identified - *e.g.*, those not using the website or attending seminars - collect same financial data for comparison with that of participants. Analyse results by demographic profile to identify those groups who benefited most; compare with target group. Identify exposure to more than one module to investigate whether the benefit is more than the modules would give separately.

Table 1. Examples of how the FEE Framework could be applied *(continued)*

Example 2: A national education programme to improve financial understanding of the population			
	Possible measures	Example methods	Actions, comments
Macro Impact	Wider benefit to economy *e.g.*, impact on national savings or on efficiency of financial markets. Efficacy of financial education compared to other policy initiatives.	Use econometric modelling based on data gathered on the proportions of people taking which actions as a result of the education intervention.	Specially designed experiments involving control groups may be required to isolate impact of financial education alone as a starting point for more advanced analysis. Care should be taken on consistency in measurement between initiatives being compared.

8. Draft guidelines for evaluating financial education programmes

The chapter proposes some guidelines for policymakers involved with financial education programmes to help develop tools to evaluate the effectiveness of financial education programmes.

These guidelines are not "best practice" recommendations, as the extent of evaluations currently available does not allow best practice to be identified. However, these draft guidelines could be developed into OECD principles of good practice on evaluating the effectiveness of financial education programmes.

Draft guidelines for evaluating the effectiveness of financial education

I. Evaluating the effectiveness of financial education: Definition and objectives

- Financial education on a range of personal finance issues is being developed in many countries, by various types of organisations using a number of different approaches. Taking into account national circumstances, and the specific circumstances of each financial education programme, evaluation of the effectiveness of such programmes should be encouraged.
- Evaluation of any financial education initiative should be considered and built in as early as possible in the design phase of that initiative.
- Evaluation of the effectiveness of financial education should help to identify what worked for whom in what circumstances in order to improve existing initiatives and to learn lessons for new programmes. It should also help to develop an understanding of what benefits different types of financial education initiatives can be expected to deliver.
- Financial education evaluators should approach any evaluation with realistic intentions, balancing what is rigorous with what is practical. As far as possible, evaluation method and findings should be shared so that knowledge can develop both on the effectiveness of financial education, and on how best to make evaluations.

II. Responsibilities and roles of governments and other public authorities

- In many countries, governments or other public authorities run financial education programmes. Where this is the case, the government or other authority should be a role model for the evaluation of financial education: measuring the impact of each such programme and making public the method and results of each such evaluation.
- Many non-governmental organisations also run financial education programmes. Governments or other public authorities should promote the benefits of evaluating these programmes, and help the programme managers make their evaluations.
- Governments or other public authorities should facilitate the evaluation of financial education effectiveness by taking a lead role in gathering, compiling and sharing the data that would help in evaluating financial education initiatives.
- Governments or other public authorities should take a lead role in developing an understanding of the effectiveness of financial education by pooling the learning from evaluations, encouraging all organisations to participate in realistic assessment of the accumulated evidence.

III. Actions to promote evaluation of the effectiveness of financial education

A. Assessing need and existing programmes

- According to national circumstances, governments or public authorities acting as their agents should review the body of evidence from existing evaluations of national financial education programmes for which they are responsible, and from evaluations available from other organisations, making a critique of the robustness of the evaluation methods in order to:
  - Highlight what is known about the effectiveness of the programmes and where there are gaps in knowledge.
  - Suggest further evaluation requirements.
- Insofar as governments or other public authorities are making policy, due regard should be paid to the current evidence base on the impact of financial education. Assessments of the potential benefits of financial education should be realistic. Where there is limited evidence for potential benefits (and this is the case currently with most financial education), best practice would be to pilot on a small scale, building in evaluation to fine-tune the initiative as it develops.

B. Methods and tools

- According to national circumstances, governments or public authorities should use the Financial Education Evaluation (FEE) Framework as suggested in this report to evaluate the effectiveness of their own financial education programmes. Further, governments or public

authorities should promote the use of the Framework to non-governmental organisations in the evaluation of their own programmes. This should, over time, help develop a consistent, robust evidence base on the impact of financial education for the benefit of all programme managers.

- In the use of the FEE Framework, evaluators should:
  - As far as possible, move beyond measuring satisfaction with the programme and increases in knowledge to measuring the success of the financial education in changing financial behaviour and the impact that has on total personal finances.
  - Consider appropriate techniques to make the evaluation as robust as possible, within budget or practical constraints: for example, use as large a survey sample as possible, recruited without bias, compare the impact of financial education with that of no intervention (a control group), use pre-and post-education measures (following up over time) and verify self-reported information independently.
- Where possible, and always with national programmes, evaluations of financial education programmes should be carried out by independent assessors with suitable skills in research methodology and, where relevant, policy analysis.
- Governments or public authorities should consider ways to facilitate the evaluation of financial education programmes run by non-governmental organisations. This should include providing data; and, sharing learning on how to evaluate and what the accumulated evidence means for the potential impact of different types of financial education. For example, governments or public authorities could sponsor:
  - Time series of financial literacy surveys of the national population.
  - A publicly available evidence database and forum for discussion of interpretation and implications of the emerging evidence from financial education evaluation.
  - An evaluation toolkit with practical suggestions for different types of evaluation.
  - Conferences, journals, on-line forums for financial education programme managers within the country, and between countries.
  - Consistent surveys and evaluations across countries, to establish comparative measures.
- Governments should consider whether there is learning for how to evaluate the effectiveness of financial education from other public education programmes: for example, from public health or safety campaigns, or schools or adult general education.
- Governments or public authorities should consider convenient ways to gather data that could be useful for investigations into the effectiveness of financial education, building on existing research. For example, where national surveys of individual economic circumstances are carried out,

additional questions on respondents' financial knowledge, behaviour and usage of various financial education methods could be inserted.

Notes

1 See also NEFE (2007) p. 19.

2 OECD (2005) p. 13.

3 HM Treasury (2007a) p. 19.

4 Examples would be help with developing a personal budget or debt reduction plan, or the "Money Guidance" initiative in the UK, previously named "Generic Financial Advice": HM Treasury (2008) and (2007a) p. 49.

5 For examples of policymakers' reasoning, see OECD (2005), US Department of the Treasury (2006), UK HM Treasury (2007a).

6 Campbell (2006).

7 New Zealand: Office of the Minister of Finance (2005), UK: HM Treasury (2007a).

8 Vitt *et al.* (2005), Fox *et al.* (2005), SEDI (2006).

9 EU Commission (2007).

10 NAO (2006) p. 8.

11 GAO (2006) Highlights page and p. 36.

12 Braunstein and Welch (2002), Lyons *et al.* (2005), OECD (2005), Lerman and Bell (2006), Martin (2007).

13 OECD (2005) p. 42.

14 See also Australian Government Financial Literacy Foundation (2007) Appendix 4.

15 Fox *et al.* (2005), Lyons *et al.* (2005), OECD (2005), Lusardi (2006), Martin (2007), Fox and Bartholomae (2008).

16 Mandell (2006).

17 See also Braunstein and Welch (2002), Hilgert *et al.* (2003).

18 Lusardi (2004).

19 Jump$tart Coalition (2006).

20 Lusardi (2004).

21 Mandell (2006).

22 Campbell (2006).

23 Clark and d'Ambrosio (2003) p. 5.

24 Campbell (2006).

25 As reported in OECD (2005).

26 Lerman and Bell (2006) p. 8.

27 Lusardi & Mitchell (2006a) p. 4.

28 Lusardi & Mitchell (2006b) p. 14.

29 OECD (2005) Annex A, p. 108 (example from the national financial literacy survey in Australia).

30 BRMB (2006) pp. 13-14.

31 Personal Finance Research Centre (2005).

32 Lyons *et al.* (2005) p. 9.

33 Fox *et al.* (2005).

34 Such as in the investigation into the effectiveness of different types of credit counselling by Hirad and Zorn (2001).

35 Fox and Bartholomae (2008) pp. 55-56.

36 Smith (2004) p. 13.

37 Duflo and Saez (2002) report an experiment which suggested that individuals' decisions to enrol into an employer-sponsored savings plan were affected more by 'small' changes (perhaps from the influence of colleagues) than by obtaining new information about the plan at a financial education event.

38 For example, Clark and d'Ambrosio (2003).

39 Campbell (2006), Braunstein and Welch (2002).

40 Personal Finance Research Centre (2005).

41 Campbell (2006).

42 Lyons (2005) page 37.

43 HM Treasury (2007b) Annex 6. The countries covered were: Australia, Bulgaria, Canada, Ireland, New Zealand, and the US.

44 Also see NEFE (2007) p. 20.

45 Fox *et al.* (2005) p. 204.

46 Lyons at al (2005) and Fox *et al.* (2005) discuss further benefits.

47 Fox *et al.* (2005) p. 209.

48 NEFE (2007) p. 20.

49 Adapted from Jacobs' (1988) *Five-Tiered Approach to Program Evaluation* as presented in Fox *et al.* (2005).

50 HM Treasury (2008).

51 NEFE (2007).

52 See, for example, the US Department of Education's Institute of Education Sciences National Center for Education Evaluation and Regional Assistance (2003); the UK Department of Transport (2001) on the evaluation of road safety campaigns; Hutchinson (1999) on evaluating the effectiveness of public health education interventions.

53 See Fox *et al.* (2005) p. 204 for use of the framework in 'formative' and 'summative' approaches.

References

AC Nielsen Research (2005) *ANZ Survey of Adult Financial Literacy in Australia*. Prepared for ANZ Banking Group, November 2005. Available at www.anz.com.au.

Atkinson A., McKay S., Kempson E. and Collard S. (2006) *Levels of Financial Capability in the UK: results of a baseline survey Consumer Research 47* (CR47). Commissioned from the Personal Finance Research Centre, University of Bristol and published by the Financial Services Authority, March 2006. Available at www.fsa.gov.uk.

Australian Government Financial Literacy Foundation (2007) *Financial literacy: Australians understanding money*. Available at www.understandingmoney.gov.au. © Commonwealth of Australia 2007.

Bayer, P., Bernheim, B. and Scholz, J. (1996) *The effects of financial education in the workplace: evidence from a survey of employers*, National Bureau of Economic Research (NBER) Working Paper 5655, July. Available at www.nber.org.

Bernheim, B. and Garrett, D. (1996) *The determinants and consequences of financial education in the workplace: evidence from a survey of households*, Stanford Economics Working Paper #96-007. Available at http://www-econ.stanford.edu.

Bernheim, B. and Garrett, D. (2003) *The effects of financial education in the workplace: evidence from a survey of households*. Published in the *Journal of Public Economics*, 87, p1487-1519. Available at www.elsevier.com.

Bernheim B.D., Garrett D. M. and Maki D.M. (1997) *Education and Saving: The long-term effects of High School financial curriculum mandates*. National Bureau of Economic Research (NBER) Working Paper 6085, July. Available at www.nber.org.

Boyce L. and Danes S.M. (1998) *Evaluation of the NEFE High School Financial Planning Program® 1997-8*. Published by the National Endowment for Financial Education (NEFE). Available at www.nefe.org.

Braunstein S. and Welch C. (2002) *Financial Literacy: An overview of Practice, Research, and Policy*. Federal Reserve Bulletin, November 2002. Available at www.federalreserve.gov.

BRMB (2006) *Financial Capability baseline survey: methodological report Consumer Research 47a*. Prepared for and published by the Financial Services Authority, March 2006. Available at www.fsa.gov.uk.

Campbell J. Y. (2006) *Household Finance*. Published in *The Journal of Finance*, 61 (4), 1553–1604. Available at www.blackwell-synergy.com.

Clark R.L. and d'Ambrosio M. B. (2003) *Ignorance is not bliss: The importance of Financial Education*. Published in Research Dialogue No. 78 December 2003 by the TIAA-CREF Institute. Available at www.tiaa-crefinstitute.org.

Colmar Brunton (2006) *ANZ – Retirement Commission Financial Knowledge Survey*. Published by the Retirement Commission, March 2006. Available at www.retirement.org.nz.

Danes S.M. (2004) *2003-2004 Evaluation of the NEFE HSPP*. Published by the National Endowment for Financial Education (NEFE). Available at www.nefe.org.

Department of Education (US) Institute of Education Sciences National Center for Education Evaluation and Regional Assistance (2003) *Identifying and Implementing Education Practices Supported by Rigorous Evidence: A User Friendly Guide*. Available at www.excelgov.org/evidence

Department of Transport (UK) (2001) *Pawson and Myhill's evaluation lessons* published on the THINK! Road Safety Website http://www.thinkroadsafety.gov.uk/evaluation/11.htm (Accessed 10 March 2008).

Department of the Treasury (US) (2006) *Taking Ownership of the Future: The National Strategy for Financial Literacy*. Available at www.treas.gov.

Duflo E. and Saez E. (2002) *The role of information and social interactions in retirement plan decisions: Evidence from a randomized experiment* Massachusetts Institute of Technology Department of Economics Working Paper. Available from http://papers.ssrn.com.

EU Commission (2007) *Communication from the Commission COM (2007) 808*. Available at: http://ec.europa.eu/internal_market/finservices-retail/capability/index_en.htm.

Fox J., Bartholomae S. and Lee J. (2005) *Building the Case for Financial Education*. Published in *The Journal of Consumer Affairs*, 39 (1), 195–214 © 2005 by the American Council on Consumer Interests. Available at www.blackwell-synergy.com.

Fox J. and Bartholomae S. (2008) *Financial Education and Program Evaluation* in J. J. Xiao (ed.) *Handbook of Consumer Finance Research* © Springer 2008.

Financial Services Authority (FSA) (2006) *Financial Capability in the UK: Establishing a baseline*. Available at www.fsa.gov.uk.

Government Accountability Office (GAO) (2006) *Financial Literacy and Education Commission Further Progress Needed to Ensure an Effective National Strategy*. Available at www.gao.gov/cgi-bin/getrpt?GAO-07-100.

Hilgert M. A., Hogarth J. M. and Beverly S. G. (2003) *Household Financial Management: The Connection between Knowledge and Behaviour*. Federal Reserve Bulletin, July 2003. Available at www.federalreserve.gov.

Hirad A. and Zorn P.M. (2001) *A Little Knowledge Is a Good Thing: Empirical Evidence of the Effectiveness of Pre-Purchase Homeownership Counseling*.

Paper, dated May 2001, presented at Federal Reserve Bank of Chicago conference March 2003. Available at www.chicagofed.org/cedric/.

HM Treasury (UK) (2008) *Thoresen Review of Generic Financial Advice: Final Report*. Available at www.hm-treasury.gov.uk. © Crown copyright 2008.

HM Treasury (UK) (2007a) *Financial Capability: the Government's long-term approach*. Available at www.hm-treasury.gov.uk. © Crown copyright 2007.

HM Treasury (UK) (2007b) *Thoresen Review of Generic Financial Advice: Interim Report*. Available at www.hm-treasury.gov.uk. © Crown copyright 2007.

Hutchinson L. (1999) *Evaluating and researching the effectiveness of educational interventions* in *British Medical Journal* (BMJ) Volume 318 May 1999 www.bmj.com

Jump$tart Coalition (2006) *Improving Education: 2006 National Jump$tart Coalition Survey*. Available at www.jumpstart.org.

Lerman R.I. and Bell E. (2006) *Financial Literacy Strategies: Where Do We Go From Here?* Policy Brief 2006-PB-10 published by Networks Financial Institute at Indiana State University, April 2006. available at www.networksfinancialinstitute.org.

Lusardi A. (2002) *Preparing for retirement: The importance of planning costs*. Published in National Tax Association Proceedings 2002 pp. 148-154. Available at www.dartmouth.edu.

Lusardi A. (2004) *Saving and the effectiveness of financial education*. Published in *Pension Design and Structure: New Lessons from Behavioral Finance* edited by O. Mitchell and S. Utkus, Oxford University Press.

Lusardi A. (2006) *Financial Literacy and Financial Education: Review and Policy Implications*. Policy Brief 2006-PB-11 published by Networks Financial Institute at Indiana State University, May 2006. Available at www.networksfinancialinstitute.org.

Lusardi A. and Mitchell O. (2006a) *Financial Literacy and Planning: Implications for Retirement Wellbeing*. Paper published by the Retirement Research Consortium and the Pension Research Council at the Wharton School, March. Available at www.pensionresearchcouncil.org.

Lusardi A. and Mitchell O. (2006b) *Baby Boomer Retirement Security: The roles of planning, financial literacy, and housing wealth*. National Bureau of Economic Research (NBER) Working Paper 12585, October. Available at www.nber.org.

Lyons A. C., Palmer L., Jayaratne K.S.U. and Scherpf E. (2005) *Are We Making the Grade? A National Overview of Financial Education and Program Evaluation*. Working Paper No. 012 published by the Center for Economic Education at University of Illinois at Chicago. Available at http://cee.econ.uic.edu.

Mandell L. (2006) *Financial Literacy: If It's So Important, Why Isn't It Improving?* Policy Brief 2006-PB-08 published by Networks Financial Institute at Indiana State University, April 2006. Available at www.networksfinancialinstitute.org.

Martin M. (2007) *A Literature Review on the Effectiveness of Financial Education* Federal Reserve Bank of Richmond Working Paper 07-3. Available at: www.richmondfed.org/publications/economic_research/working_papers/index.cfm

National Audit Office (NAO) (2007) *The Financial Services Authority*. Available at www.nao.org.uk/publications/nao_reports/06-07/0607500.pdf

National Endowment for Financial Education (NEFE) (2007) *Financial Education evaluation manual*. Available at: http://www2.nefe.org/eval/manual_db.php

OECD (2005) *Improving Financial Literacy Analysis of Issues and Policies* © OECD 2005. Available at www.oecd.org.

Office of the Minister of Finance (New Zealand) (2005) *Memorandum to Cabinet Policy Committee: Budget 2005 Savings Package: Work Based Savings Scheme* 6 April 2005. Available at www.treasury.govt.nz.

Personal Finance Research Centre, University of Bristol (2005) *Measuring financial capability: and exploratory study Consumer Research 37*. Prepared for and published by the Financial Services Authority, June 2005. Available at www.fsa.gov.uk.

Roy Morgan Research (2003) *ANZ Survey of Adult Financial Literacy in Australia*. Prepared for ANZ Banking Group, May 2003. Available at www.anz.com.au.

SEDI (2006) *Financial Capability: Learning From Canadian Communities*, Research Paper. Available at www.sedi.org.

Smith L. (2004) *Evaluation of the pfeg Excellence and Access programme*. Commissioned from Brunel University and published by pfeg. Available at www.pfeg.org.

Vitt L.A., Reichbach G., Kent J.L. and Siegenthaler J. (2005) *Goodbye to Complacency: Financial Literacy Education in the United States 2000-2005*. Institute for Socio-Financial Studies © 2005, AARP Available at www.isfs.org.

Appendix
Examples of evaluation

Table 1. Examples of evaluations built in to specific financial education programmes

Selected study	Data, methods	Key findings (quotes in *italics*)	Strengths and weaknesses of evaluation(s)
TIAA-CREF US Clark R.L. and d'Ambrosio M. B. *Ignorance is not bliss: The importance of Financial Education* Published 2003 by the TIAA-CREF Institute	Surveys of participants in retirement savings seminars run by TIAA-CREF (a mutual fund with customers mostly working in education) in 2001/2. Survey One asked about retirement goals before the seminar; Survey Two immediately after the seminar about changes to goals and saving planned as a result and Survey Three about actual saving changes made 3 months later.	The seminars had some immediate impact on most participants' ideas for retirement. From Survey Two: 91% intended to make some change to retirement saving *e.g.*, increasing contributions or changing investment allocation. 22% of respondents altered their income goal and 6% their retirement age goal, being more likely to raise than lower both. 6% changed both goals. However: *Responses to Survey Three indicate a substantial disconnect between the stated intent to change saving behaviour immediately following the seminar and the actual actions taken in the next three months.* *e.g.*, 25% of those completing Survey Three who said they would open a new savings account actually did so; of those who said they did not plan to open one, 22% indicated that they did intend to do so.	**Strengths** Evaluation built into seminar design, focused on impact of attending seminar. Both intention to act and actual behaviour (self-reported) investigated. Fairly high response rate for Surveys One and Two (34%; 633 responses). **Weaknesses** One particular type of intervention evaluated (one seminar of one hour run by one financial institution to its market segment); so application to other audiences or more in-depth financial education not able to be explored. Fewer respondents to Survey Three (110) so conclusions about actions more tentative.

...Table 1 continues

Table 1 continued...

NEFE US Boyce L. and Danes S.M. *Evaluation of the NEFE High School Financial Planning Program® 1997-8* Danes S.M. *2003-2004 Evaluation of the NEFE HSPP* Both published by NEFE	Questionnaire sent to High School students and teachers who requested the NEFE curriculum materials. High School students: Self-reported answers on a '1 to 5' scale to 13 questions about financial behaviour, knowledge and confidence before and after taking the NEFE curriculum. Follow up survey after 3 months. Teachers: satisfaction with course and their assessment of students' learning.	Average score increased after taking the curriculum for all questions in 1997/8, and for all but one in 2003/4. For each question, around 30-60% of students reported a higher score after the study than before (similar in both years). Around 10% of students reported a lower score for each question after the 1997/8 test; loss was not reported on in 2003/4. Around 60% of the 3-month follow up sample reported changes in saving or spending after the study (both years). Most popular change was *Think more carefully about spending*. Teachers assessed improvement in students' financial abilities consistently with the above, and were satisfied with the curriculum.	**Strengths** Before and after survey seeks to identify impact of studying curriculum. Fairly large sample: 1997/8: 4,107 students (response rate 31%) 2003/4: 5,329 (26%). **Weaknesses** No control group of those who took another curriculum, or none. Measures are self-reported; actual behaviour not checked. 3-month follow up group self-selected, smaller sample: 1997/8: 418 (response rate 3%) 2003/4: 324 (1.6%).

...Table 1 continues

Table 1 continued...

Jump$tart US The Jump$tart coalition *2006 National Jump$tart Coalition Survey* Mandell L. *Financial Literacy: If It's So Important, Why Isn't It Improving?* Published in Policy Brief April 2006 by Networks Financial Institute at Indiana State University	A survey comprising 50 questions on financial knowledge, attitudes and behaviour given to a random, national sample of thousands of 17-18 year old High School students (usually within the year they could have taken a financial education course). Various associations with knowledge score explored in these surveys and in smaller one-off surveys.	Average score (% of questions answered correctly) is low and has declined: 57.3% in 1997 50.2% in 2002 52.3% in 2004 52.4% in 2006 *The turnaround in financial literacy* [increase in score since 2002] *continues to be led by the more affluent segments.* *We have long noted with dismay that students who take a high school course in personal finance tend to do a little worse in our exam that those who do not.* *Those at both extremes (very thrifty or very spending-oriented) did worse on both the 2004 and 2006 exams than those in the middle.*	**Strengths** Long-term time trend of financial knowledge scores from a consistent survey of students of the same age. One-off investigations yield deeper insights. Proponent of financial education disclosing poor results. **Weaknesses** Reasons for poor trend in results not identified, although suggestion that taking an economics course with money management is more effective than taking a money management course alone. Does not follow one cohort of students over time. Correct answers for some exam questions seem specific to a course of learning rather than necessary to good financial practice.

...Table 1 continues

Table 1 continued…			
pfeg UK Smith L. *Evaluation of the pfeg Excellence and Access programme* Commissioned from Brunel University and published by pfeg, 2004	Questionnaire sent to all 1,000 teachers and pfeg school advisers participating in the pfeg programme; a more in-depth survey sent to a random 15% sample of teachers and students aged 11-19; case studies collected by interviews. Teachers: Asked about their confidence in teaching personal finance and their assessment of the potential of the programme. Students: Asked nine questions: 'how much do you know about…' specific financial issues on a '1 to 5' scale.	Teacher confidence in personal finance not high, but *experience of project work in the classroom has had a powerful impact on participating teachers' confidence in undertaking personal finance education.* Students' confidence and knowledge low. *..pupils' financial experiences outside school are very powerful and the folklore is bolstered by the activities and discussions of family and friends. In contrast, the project's access to pupils is dependent on the goodwill of extremely busy schools and teachers. At this stage, therefore, we are not confident about the general effectiveness of pupils' personal finance learning.* Aimed to identify most effective methods, but found this was not possible as curriculum was not settled. Suggested that teaching seemed to work best if not just content-based but made *relevant, realistic and practical* [to] *problem-solving situations … outside school.*	**Strengths** Mixture of qualitative and qualitative techniques paints a broad picture. Realistic assessment of the challenges of evaluating effectiveness. **Weaknesses** Project brief limited the quantitative assessment to self-reporting of confidence and knowledge on personal finance issues; actual knowledge or 'before and after' impact of programme not explored. No control group of those who took part in another programme, or none.

Table 2. Examples of evaluations of the financial capability levels of a national population

Selected study	Data, methods	Key findings (quotes in *italics*)	Strengths and weaknesses of evaluation(s)
Australia Both prepared for ANZ Banking Group: Roy Morgan Research *ANZ Survey of Adult Financial Literacy in Australia* May 2003 AC Nielsen Research *ANZ Survey of Adult Financial Literacy in Australia* November 2005	3,513 respondents for a specially-designed telephone survey (3,548 in 2003). Also 202 respondents to an in-depth interview in 2003. Collected proportion self-reporting 'yes/no' or on a scale to questions on financial behaviour, attitude and knowledge. Scored answers to rank respondents' financial literacy; demographic characteristics of each quintile identified.	No or very little change in responses between 2003 and 2005. *…most Australians have a reasonable level of financial literacy…* (both studies; examples 2005). 97% have a banking account. 84% feel 'well informed' when making financial decisions. Some problem areas identified, *e.g.*: 16% spend all their income and do not plan for the future. 24% do not read their superannuation statement. Lowest levels of financial literacy linked with lower education, not working, low incomes, low savings, single, aged under 25 or over 70.	**Strengths** Wide coverage of knowledge, attitude and behaviour. Straightforward analysis and presentation gives clear picture of the population, including identifying the characteristics of those most and least likely to have problems with financial literacy. Questions and analysis repeated to track changes in population responses over time. **Weaknesses** While scoring is easy to understand it is somewhat arbitrary rather than statistically rigorous. Literacy levels may be over-stated as confidence is self-reported.
New Zealand Colmar Brunton *ANZ – Retirement Commission Financial Knowledge Survey* Published by the Retirement Commission, March 2006	856 respondents for a specially-designed in-depth interview. Analysis on financial literacy similar to that in Australian survey, except respondents grouped into three: low, medium and high.	*While the knowledge levels are reasonable overall, there are gaps that could be pivotal in deciding how the population adapts in future to the modern financial environment and how well we do in retirement.* For example: 83% feel confident about managing finances. 21% have a written financial plan. 30% say they could not cope in the short-term with losing income. Lowest levels of financial literacy linked with lower education, low incomes, low net worth, being a tenant, Maori or Pacific ethnicity, aged under 25 or over 75.	As for the Australian survey above, although use of more in-depth interviews allowed deeper questioning.

…Table 2 continues

Table 2 continued…			
UK FSA *Financial Capability in the UK: Establishing a Baseline* More detail on methodology in: Atkinson A., McKay S., Kempson E. and Collard S. *Levels of Financial Capability in the UK: results of a baseline survey Consumer Research 47* (CR47) Commissioned from the Personal Finance Research Centre, University of Bristol and published by the FSA Both March 2006	5,300+ respondents for a specially designed face-to-face interview survey with questions on financial behaviour and knowledge. Conducted factor analysis on responses to describe a distribution from low to high 'scores' on four imposed 'domains' of financial behaviour: *managing money, planning ahead, choosing products, staying informed* as described in CR47. Five domains were described in the FSA report, as *managing money* was split into *making ends meet* and *keeping track of your finances*.	*Large numbers of people from all sections of society are not taking basic steps to plan ahead…* Over-indebtedness affects small numbers but when it strikes it is often severe. *Many people are taking on financial risks without realising it, because they struggle to choose products that truly meet their needs.* *The under-40s….are typically much less financially capable than their elders.* 79% answered a question on inflation correctly. 72% say it is important to keep informed on financial matters; 88% of those say they do so. 26% have not personally bought a product in the last 5 years. 75% of people say they have rainy day money, but nearly half of people have no savings at all. 9% of people say they always run out of money at the end of the week or month.	**Strengths** Broad survey with many questions on different aspects of personal finance behaviour and knowledge. Methodology developed over many months, including trialling the questionnaire. Research team refined emphasis towards financial behaviour as a result of input from focus groups (See Personal Finance Research Centre, 2005 for detail). **Weaknesses** Self-reported behaviour. Complexity of analysis introduces subjectivity, for example, in what the domains should be and may restrict comparative interpretation of future surveys.

Table 3. Examples of studies taking advantage of past experiments

Selected study	Data, methods	Key findings (quotes in *italics*)	Strengths and weaknesses of evaluation(s)
Compulsory school mandates US Bernheim B.D., Garrett D. M. and Maki D.M. *Education and Saving: The long-term effects of High School financial curriculum mandates* NBER Working Paper 6085, July 1997	Ongoing telephone survey sponsored by Merrill Lynch extended in 1995 to ask 2,000 30 to 49 year-olds about High School financial education. 1,870 of those completed questions on savings; 911 on net worth. By asking respondents in which state they went to High School, researchers identified those exposed to a 'mandate' that required students to receive instruction in consumer education.	The introduction of compulsory mandates increased exposure to consumer education:*…over time, mandates appear to have significantly increased the fraction of individuals taking generic consumer education courses, as well as the fraction taking courses covering household financial topics.* Mandates also appear to have had a positive, gradual impact on savings rates in adulthood and net worth accumulated: *Systematic differences in savings rates across states do not appear until after mandates imposed. …one infers that (self-reported) savings rates were roughly 1.5 percentage points higher for those entering the affected high-school grade five years after the imposition of a mandate, than for those who were not exposed to a mandate.* *… one infers that net worth higher by roughly one-year's worth of earnings for the typical individual who was exposed to a mandate.*	**Strengths** Focused test of whether the introduction of compulsory consumer education in High School influenced savings behaviour later in life. Control group (not exposed to mandate) available. **Weaknesses** Heterogeneity in type of education received: while all mandates included consumer education (*e.g.*, product features, advertising) only half were specifically on personal finance. So, while 42% of the sample took a consumer education course in High School; only 29% took a course with financial topics. Tried to standardise definition for savings, but as self-reported and people mean different things by 'saving' then measure likely to be inconsistently applied and incomplete: *each household was asked to estimate the fraction of take-home pay that it saved on its own behalf (not including reinvested capital income or employer contributions to retirement accounts).* Household debt not explored. Net worth data less robust. A smaller sample (possibly self-selected) answered questions on assets, and then measure of net worth constructed by researchers.

…Table 3 continues

Table 3 continued...

Retirement seminars US Lusardi. A. *Preparing for retirement: The importance of planning costs* published in *National Tax Association Proceedings* 2002 *Saving and the effectiveness of financial education* 2004	3,265 pre-retirees aged 50-61 in 1992 responding to questions about their finances in ongoing Health and Retirement Study (HRS). Self-employed and non-working respondents excluded. Around 400 answered 'yes' to *Have you attended a meeting on retirement and retirement planning organised by your or your spouse's employer?* (12.6% of sample). Measure of financial asset accumulation based on self-reported data and either excluded pensions and Social Security or estimated for those items.	Financial assets accumulated for retirement were higher for those who had attended a retirement seminar. Greater effect at low incomes suggests seminars were 'remedial' rather than appealing to those with a 'taste for saving': *Overall, attending seminars appears to increase financial wealth by approximately 18%. This effect derives mainly from the bottom of the distribution, where wealth increased by more than 70%. The effect of seminars decreases steadily as one moves to higher quartiles of wealth.* Accumulation was associated positively with having a bequest motive; a pension; or, a tendency to give financial help to family, and negatively with: smoking; drinking; or, believing house prices will go up. Attending seminars had as large an effect on asset accumulation as having had higher education or not smoking.	**Strengths** HRS is a rich longitudinal data source. Study explores useful associations: the impact of retirement seminars on financial asset accumulation sized against that of different characteristics, and, the differing impact of retirement seminars at different points of the income distribution. **Weaknesses** Seminars attended voluntarily (so sample may be biased to retirement planning), by a small proportion of respondents. Seminars heterogeneous, varying by type, quality, content and when respondents attended. Measure of accumulated assets used may not be robust.

...Table 3 continues

Table 3, retirement seminars, US, continued			
Bayer, P., Bernheim, B. and Scholz, J. *The effects of financial education in the workplace: evidence from a survey of employers*, NBER Working Paper 5655, July 1996 See also Bernheim and Garrett (1996) and (2003) for related survey of employees.	1993 and 1994 telephone surveys of employers of more than 200 employees in the US that offer 401(k) plans (n=596 in 1993; 566 in 1994). Frequency of use of different types of financial education offered in the workplace measured: Summary plan descriptions; employee newsletters; investments seminars for all employees, for those aged over 50 or for those within a year or two of retirement.	Retirement seminars offered less frequently than other types of 'education' (by 44% of pension plan sponsors compared to 65% for newsletters and 74% for summary plan descriptions). *For non-highly compensated employees, frequent seminars are associated with participation rates* [in 401(k) plans] *that are 11.5 percentage points higher than plans with no seminars. The corresponding figure for highly compensated employees is 6.4 percentage points.* Occasional seminars do not seem to make a difference; neither do newsletters or summary plan descriptions. Contribution rates in 401(k) plans are also higher where frequent or occasional seminars are offered.	**Strengths** Attempt made to distinguish between types of workplace education offered. **Weaknesses** 'Education' is defined as specific to the firms' retirement plans so study is not investigating broader retirement seminars. Only the links between the education about the offered plan and participation in the plan are investigated; impact on other financial behaviour not able to be identified. Data now rather old.
Links between financial knowledge & behaviour US Hilgert M. A., Hogarth J. M. and Beverly S. G. *Household Financial Management: The Connection between Knowledge and Behaviour* Federal Reserve Bulletin July 2003	1,004 respondents nationwide to additional module in ongoing telephone University of Michigan Survey of Consumers in 2001. Respondents 'scored' by their answers to 28 True/False financial knowledge questions; and their self-reported practices in: cash-flow, credit, saving and investment.	Significant correlation between knowledge and behaviour: people who knew more were more likely to engage with financial products and engage in good practice in these areas. Specific knowledge was linked with specific products *e.g.*, if knew about credit more likely to engage in credit management. Households that reported learning a lot from personal experience and from friends and family were more likely to have higher scores.	**Strengths** Focused study with simple data. **Weaknesses** Self-reported behaviour. Causality not proven: whether product use leads to better knowledge or the other way around, or whether there could be a third unexplained factor.

...Table 3 continues

Table 3 Links between financial knowledge & behaviour continued…

US Lusardi A. and Mitchell O. S. *Financial Literacy and Planning: Implications for Retirement Wellbeing* Working Paper published by Retirement Research Consortium and the Pension Research Council at the Wharton School, March 2006 *Baby Boomer Retirement Security: The roles of planning, financial literacy, and housing wealth* NBER Working Paper 12585, October 2006	Both studies based on Health and Retirement Survey (HRS) March study: 1,269 respondents of HRS 2004 aged 50+ additionally asked three very simple questions to test financial knowledge (on compound interest, inflation and risk) as well as questions about experience with making a plan for retirement. October study: Compares HRS 1992 and 2004 ('Early Baby Boomers') cohorts aged 51-56 at the time. Sample size 2,653 in 2004 and 4,580 in 1992. Asked two very simple questions to test financial knowledge (a percentage calculation and lottery division) and, if they got one of those right, a compound interest question. 'Planners' for retirement identified by asking *How much have you thought about retirement? A lot, some, a little or hardly at all?*	'Widespread' financial illiteracy among older Americans: March study: half of respondents correct on compound interest and inflation questions; one-third correctly answered those and a question on risk diversification. October study: 83.5% correct on percentage calculation; 56% on lottery division; 18% on compound interest. A minority plan for retirement (March): 31% had ever tried to *figure out how much to save for retirement*; 21% *more or less developed a plan*; 18.5% were *mostly able to stick to the plan*. Those who plan more likely to give correct answers to financial literacy questions. Those unable to answer a question correctly on compound interest (both studies) and divide lottery winnings (October) less likely to plan. *Financial literacy is positively correlated with wealth but only in the first two quartiles of the wealth distribution (…a remarkable result* as other factors controlled for) (March). *Planners accumulate larger amounts of wealth than non-planners… even "a little" or "some" planning generates large wealth differences* (October). Association between planning and wealth appears to hold for both cohorts (October).	**Strengths** HRS is a rich longitudinal data source, supplemented here by considering a time-trend and by a purpose-built module on planning and financial literacy. Associations between financial knowledge (referred to as 'literacy' in studies), planning behaviour and financial accumulation examined in detail. Considers causality – does better financial knowledge lead to planning which leads to higher wealth? **Weaknesses** Robustness of measure of wealth questioned as excludes Social Security and pensions, and imputes for those that did not report. Low levels of knowledge and small numbers of (self-reported) planners. Cannot distinguish between types and intensities of 'planning' actually carried out. Cannot prove causality from financial knowledge to planning behaviour to wealth.

…Table 3 continues

Table 3 continued...			
Credit counselling US Hirad A. and Zorn P.M *A Little Knowledge Is a Good Thing: Empirical Evidence of the Effectiveness of Pre-Purchase Homeownership Counseling* Paper presented at Federal Reserve Bank of Chicago conference March 2001	Delinquency of 38,080 Freddie Mac loans granted between 1993 and 1998 where the applicant received pre-purchase counselling compared to that of 1,238 loans exempt from counselling requirement.	On average, the loans taken out by borrowers who received counselling were 19% less likely to have ever been '90 days delinquent' than those where counselling was not required. *…borrowers receiving individual counselling have the lowest delinquency rates. Classroom and home study are also associated with lower borrower delinquency rates, but telephone counselling is found to have no statistically significant impact.* No evidence that counselling providers varied in their effectiveness.	**Strengths** Large sample of counselled loans, with attempt to identify a control group receiving no counselling. Comparative investigation into the different types of counselling useful as, in the absence of proof of effectiveness, policy tends to favour less costly methods such as telephone and home study. **Weaknesses** Loans which did not require counselling were defined by being of lower credit risk, therefore a biased group, reducing the strength of conclusions. Smaller samples for individual counselling (10% of total) and classroom (9%) compared to home study (43%) and telephone (34%).

Financial Education Programmes in Schools

Analysis of Selected Current Programmes and Literature Draft Recommendations for Best Practices

Shaun Mundy

Former Head of Financial Capability Department, Financial Services Authority, United Kingdom and OECD Consultant

Executive summary

Research in a number of countries has shown that many people lack the ability to manage their money well. At the same time, the consequences, both to individuals and to society at large, of a failure by people to take adequate steps to safeguard their financial future are becoming increasingly serious.

The OECD Financial Education Project was initiated in 2003, in response to OECD government concerns over the possible adverse effects of low levels of financial literacy and of financial education. The first major study of financial education at the international level was published in 2005. That report, *Improving Financial Literacy: Analysis of Issues and Policies*, identified and analysed financial literacy surveys in OECD member countries, highlighting the economic, demographic and policy changes that make financial education increasingly important. In 2005, OECD governments also endorsed a *Recommendation on Principles and Good Practices for Financial Education and Awareness*. This preliminary report on financial education programmes in schools and other educational establishments, forms part of this Project.

This report reviews financial education programmes aimed at students in selected OECD and non-OECD member countries. The focus is mainly on programmes aimed at schoolchildren, since the great majority of programmes intended for students are for those of school age.

The overall picture is one of rapid growth in both the number and range of financial education initiatives. But the picture is patchy, both between countries and within countries.

There is a wide variety of programmes in existence, many of which have been launched relatively recently. Many of the programmes are innovative and have been carefully designed so that their target audience will find them engaging. While many of these programmes have characteristics which are particular to the country in question, there is nevertheless clear potential for those who are looking to develop new financial education programmes to adopt ideas from existing ones – whether from their own country or overseas. This report refers to websites, and to other sources of programmes, on which policy makers and other stakeholders may wish to draw.

This report also reviews the available research on the effectiveness of financial education initiatives aimed at students. There is, at least as yet, a lack of unambiguous research to demonstrate the effectiveness of financial education programmes for students. Not surprisingly, the focus to date in many countries has been on the development of new programmes, rather than on commissioning research. The report recommends that a broad range of research is undertaken to establish the most effective ways of providing financial

education, both to assist policy makers to decide how best to focus resources in the future and to help convince educationalists that, within what are often crowded curricula, space should be found for personal finance education.

Delivering high quality financial education to students is an idea whose time has come. This report sets out a number of draft recommendations for increasing the delivery of, and the effectiveness of, the provision of financial education to students.

Drawing on the main findings of this initial survey of financial education programmes in educational establishments, the OECD intends to launch in 2009-2010 a more extensive stock-take exercise covering all OECD countries and selected non-members countries. This broader exercise would enable the development of a more comprehensive report on financial education programmes in educational establishments across a wide range of countries.

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Introduction

In a world in which consumers are increasingly being expected to take responsibility for managing their finances, and in which the range and complexity of choices which consumers face continue to grow, it is important that people are able to make sound decisions about their money. However, many people lack the skills and knowledge to do so. Effective financial education programmes can help give people the skills, knowledge and confidence which they need to manage their money well.

This preliminary report forms part of the OECD Financial Education Project, which was initiated in 2003 in response to OECD government concerns about the possible adverse effects of low levels of financial literacy. In recent years, the OECD has become an international leader in the area of financial education, promoting the need for financial education and helping to set standards for it. The OECD published the first major study of financial education at the international level in 2005. That report, *Improving Financial Literacy: Analysis of Issues and Policies*, identified and analysed financial literacy surveys in OECD member countries, highlighting the economic, demographic and policy changes that make financial education increasingly important. The report also described the various financial education programmes being offered in OECD countries, provided an assessment of their effectiveness and suggested actions which policy makers could take to improve the provision of financial education.

In 2005, OECD governments also endorsed a *Recommendation on Principles and Good Practices for Financial Education and Awareness*. One of the key principles is that "Financial education should start at school....People should be educated about financial matters as early as possible in their lives."[1] As part of its current work on financial education, the OECD is finalising work and recommendations on good practices on financial education in the context of pensions and insurance, which should be released in the first half of 2008. It is also conducting work on financial education and credit issues.

As the OECD's 2005 study brings out, it is becoming increasingly important that consumers have the ability to manage their finances well. For example:

- in many countries, consumers are being expected to take greater personal responsibility than in the past for their financial well-being;
- people are living longer and need to be able to finance themselves throughout the increased period which they can expect to spend in retirement;
- the financial decisions with which people are faced are often more complex than was typically the case in the past.

There is no single solution to the challenge of how to equip people to manage their finances well. Instead, a range of support – ideally, comprising education, information and advice – needs to be provided. The provision of effective financial education to students in schools, and also to students in universities and colleges, can play an important role within an overall financial education strategy:

- financial education can potentially be provided to all schoolchildren in particular age cohorts: they are, in effect, a captive audience. Near-universal coverage of this kind is not feasible for adults;

- other things being equal, younger people are likely to be more receptive to education than older people;
- increasingly, children are making major purchases from a young age and some of them can become determinants of family expenditure. Many older schoolchildren, as well as those who have gone on to further or higher education, have an income earned from occasional work. Children and young people are important target groups for advertising and marketing;
- many young people spend a lot of money on, for example, mobile phone charges. Mobile phone tariffs can be difficult to understand and comparisons between different offers are generally not straightforward;
- many older schoolchildren need to consider the financial implications of whether or not to continue their education;
- young people are increasingly taking financial decisions which could have a significant impact on their well-being, for example by exposing them to the risk of building up significant debts;
- students are the consumers of the future. Financial education can help provide students with the building blocks which they will need to make sound financial decisions throughout their lives. If responsible attitudes and good habits are instilled in people at an early age, they are less likely to get into financial difficulties in later life and are more likely to make financial provision for their future;
- research (for example in the UK) has suggested that young people are less financially capable than their elders. In many countries, however, young people face greater financial challenges than their parents' generation did when they were at a similar age;
- many parents lack the knowledge and ability to manage their money well and so are not in a position to provide effective guidance to their children. There are examples of students, who have themselves benefited from financial education, helping their parents to manage their finances.

However, there are a number of challenges to the development and delivery of effective financial education programmes for students:

- governments and other policy makers may fail to recognise the importance of financial education or may otherwise be unwilling to make available resources or to promote its delivery;
- curricula are often already crowded, making it difficult to introduce stand-alone financial education programmes;
- teachers may not have the competence or confidence to deliver effective financial education;
- if financial education is not delivered well, students are likely to find it dull and uninspiring;

- there is a lack of research findings showing how to deliver financial education most effectively or showing the impact of financial education on attitudes to money management and on likely future behaviours.

As this report demonstrates, however, there are lessons that can be drawn from those countries which have made greatest progress in delivering effective financial education programmes which can help to overcome these challenges. Among other things:

- financial education can be integrated into more established subjects (such as mathematics and citizenship) as well as, or instead of, being delivered as a separate subject;
- teachers can be helped, through training and the provision of tried and tested materials and lesson plans, to become competent and confident in the delivery of financial education;
- there is a wealth of attractive materials lesson plans and other support which teachers can draw on;
- many students – as well as parents and teachers – attach priority to receiving effective financial education;
- as discussed in Section 2 of this report, there are a number of research results which, together with feedback from educational professionals and students, point to particular ways to deliver financial education effectively.

As experience grows in what is still a relatively new discipline, and as good practice is disseminated and adopted, it is likely that understanding will grow as to what works well and that high quality materials and techniques will become increasingly widely available.

Against this backdrop, Section 1 of this report discusses the main features of current financial education programmes, drawing on examples from countries which responded to a questionnaire. Section 2 summarises the results of some of the main relevant research. Section 3 sets out draft recommendations, which are intended to assist policy makers and others with an interest in improving the delivery of financial education for students.

Annex A summarises some of the main features of financial education in those countries which responded to a questionnaire. Annex B provides further detail, on a country-by-country basis, of financial education programmes in schools.

Methodology

A questionnaire was sent to experts in selected OECD member countries and non-member countries, to seek information about financial education programmes for students and any relevant research. Experts in all but two of these countries (Australia, Canada, France, Ireland, Malaysia, Netherlands, New Zealand, Singapore, United Kingdom and United States) completed the questionnaire and/or provided other information.

In addition, an analysis was undertaken of relevant published research into the effectiveness of financial education initiatives aimed at students; and

supplementary advice was obtained from some academics specialising in this field.

Telephone or face-to-face interviews were undertaken with some of the experts who were consulted.

Limitations

The analysis of financial education programmes is confined to programmes in those countries which were sent the questionnaire and which provided information in response. Varying amounts of information are available about programmes in different countries; in some cases, information was provided about only some aspects of programmes in those countries.

In several other countries, financial education programmes aimed at students have recently been launched or are about to be launched. This reflects the growing recognition of the importance of financial education.

The great majority of existing programmes are aimed at students of school age, rather than students in universities or colleges. Correspondingly, most of the information received in response to the questionnaire was about schools programmes. Reflecting this, most of the report focuses on this area, with a shorter section on financial education in universities and colleges[2].

In many countries, little or no research has so far been conducted into the effectiveness and efficiency of financial education programmes. This is an area which is ripe for development. The focus of research which has been undertaken tends to differ as between different countries, which limits the scope for comparing results.

Virtually all the research which has been conducted has focused on financial education in schools (rather than in universities or colleges).

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Section 1

Financial education in schools: challenges and solutions

Until recently, few people understood the concept of financial literacy or why improvements were necessary. However, in many countries today, relevant stakeholders increasingly recognise the consequences – to society as well as to individuals – of poor levels of financial literacy and a number of initiatives are under way to try to improve the current situation. But much more remains to be done.

It would be unrealistic to expect that a single solution would be sufficient on its own. For example, a programme which focused solely on students would provide no direct benefits to the existing adult population. And it would take several decades for the great bulk of financial services consumers to have been exposed to a financial education programme as students. Moreover, many adults who had received financial education as a student would benefit from refresher training or support – particularly given the rapidly changing financial landscape, which can mean that, for many, there have been significant developments since they finished full-time education.

So, broadly based strategies are needed to drive up current levels of financial capability. Within such strategies, financial education programmes aimed at students have a vital role to play.

The remainder of this section of the report examines financial education programmes in schools (and the much more limited number of financial education programmes in universities and colleges) and reviews some of the main issues and challenges, together with solutions which have been developed in selected countries.

1. General framework and role of key stakeholders

Persuading policy and educational decision-makers

One of the major challenges to embedding financial education successfully into schools is in persuading policy and educational decision-makers to provide room in the curriculum. There are many competing demands for places in the curriculum: financial education must, in effect, compete for space against alternative subjects, such as nutrition and sex education. No matter how persuasive the case for educating students about the wise use of money, little progress is likely to be made unless relevant policy and educational decision-makers – at national and, if relevant, local levels – are on board and are supportive. So, those who are looking to promote financial education

programmes need to consider carefully whose support is needed (for example, is it sufficient to persuade Ministers and officials in national education departments; or is discretion exercised at local level, or at the level of individual schools, thus making it necessary also to persuade local officials and head teachers) and how best to secure their support. Moreover, they need to take effective action to secure this support.

One of the considerations which will weigh with decision-makers is whether proposed financial education programmes can contribute to the achievement of legislative or other requirements relating to the contents of school curricula. Those who advocate the incorporation of financial education programmes into the curriculum need to be able to address this issue.

Another factor which will weigh with decision-makers is whether or not high quality materials which students are likely to find attractive, together with training and other support for teachers, is readily available – and, if they are, at what cost. If not, there is no shortage of alternative subjects which can be taught in the limited time available for teaching students.

Policy and educational decision-makers, whether at national, regional or school level, will not necessarily recognise the importance of financial education, understand how it can be incorporated within the curriculum or know what is available to help provide effective financial education. In those circumstances, it is important to put in place an effective communications plan to ensure that key decision-makers have appropriate information on these sorts of issues.

Nevertheless, many teachers recognise the importance of financial education in providing their students with necessary life skills. For example, in the Netherlands, a survey of some 400 teachers indicated that teachers in both secondary and primary schools regard financial education as very important. Similarly, research carried out in the UK by the Financial Services Authority found that 53% of schools for children aged 11 and above and 34% of schools for those aged 7-11 considered it very, or fairly, high priority to teach personal finance education: the main reason given for not teaching it was lack of time in the curriculum.

No single organisation can bring about the successful delivery of financial education in schools. A partnership approach is needed. In Australia, for example, the Australian Government's Financial Literacy Foundation works collaboratively with educational authorities, business and community organisations. It established a national Reference Group of State and Territory education jurisdictions, Catholic and Independent sectors and Offices of Fair Trading to develop a National Consumer and Financial Literacy Professional Learning Strategy. In the UK, the FSA works closely with the national government (in particular, the Department for Children, Schools and Families and the Treasury); with devolved governments in Scotland, Wales and Northern Ireland; and with government agencies, such as the Qualifications and Curriculum Authority and the Office for Standards in Education, Children's Services and Skills (Ofsted); and, when formulating its strategy, it held a workshop with a range of headteachers. In addition, pfeg[3] (Personal Finance Education Group) which is the main delivery arm in England for the financial education in schools strategy, liaises closely, on a continuing basis, with a wide range of interested parties.

In a number of other countries (for example, Ireland, Malaysia, Netherlands, New Zealand, Singapore and United States), national financial education strategies, involving a range of partners, have been initiated or are in the process of being established. This helps to facilitate a partnership approach to the delivery of financial education in schools.

Leadership and coordination

In order to provide focus and momentum, there needs to be – as well as a partnership approach – effective leadership at national level, at individual school level and possibly at intermediate (such as regional) levels. There are a number of different models for achieving this, some of which involve more than one leader at national level, with each of the leaders focused on different aspects. Examples include the following:

- In New Zealand, the Retirement Commission leads work on financial education, as part of its leadership of the development of a national strategy for financial literacy. It may seem anomalous that an organisation whose purpose is to help people prepare financially for their retirement should lead work on financial education in schools. However, the Retirement Commission recognises that, in order for people to be able to plan for their retirement, they need to be financially well-educated and to be able to make informed financial decisions throughout their lives.

- In Malaysia, Bank Negara Malaysia (the central bank), in collaboration with the Ministry of Education and with financial institutions, plays a leading role. Its savings campaign, which was launched in 1996 and the long-term objective of which is to nurture Malaysians to be financially savvy, provides the foundations for a financial education programme for schoolchildren, which is designed to inculcate the savings habit and to create awareness of the importance of smart financial management and planning.

- The Australian Government established the Financial Literacy Foundation in June 2005, as a division of the Treasury, to give all Australians the opportunity to improve their financial knowledge and better manage their money. The Foundation provides national leadership for the national strategy on financial literacy, a key element of which is financial education in schools, and works collaboratively with educational authorities, business and community organisations to build social, spiritual, intellectual and financial capital in education nationally. This multifaceted model has coherent strategies at school, system and sector levels. It is adapted from the Alignment for Transformation Model[4] and identifies how schools acquire and utilise different kinds of resources. The Foundation continues to develop partnerships with relevant government, industry and community organisations to deliver high quality financial literacy programmes and resources.

- In the UK, the Department for Children, Schools and Families is responsible for policy relating to financial education in schools in England, with devolved governments fulfilling similar roles in Scotland, Wales and Northern Ireland, while the Financial Services Authority leads the national strategy on financial capability, one of the main strands of

which is financial education in schools. In Scotland, the main strategic organisation for financial education in schools is the Scottish Centre for Financial Education, which is part of Learning and Teaching Scotland (an organisation which advises the Scottish Government on curriculum policy).

It is important also that there is effective leadership at school level. In the UK, the Office for Standards in Education, Children's Services and Skills (Ofsted) (2008) found that, in schools and colleges where financial education was being developed successfully, there was nearly always a member of staff, often at senior level, who had overall responsibility for the development of financial education across the institution. In some cases, this was a non-teaching member of staff: this approach could work well, because the person concerned had time to liaise with teachers across the curriculum and to establish effective links with outside bodies.

Main organisations involved in the provision of financial education

In many countries, a wide range of organisations is involved, in some way, in the provision of financial education. Typically, this can include some or all of the following: government or government agencies; local government; financial services regulators and central banks; various educational bodies; private sector entities, such as financial services firms and trade bodies; and consumer and voluntary organisations. Each of these types of body has an interest in developing the financial skills of young people. There are some organisations – such as the Microfinance Centre for Central and Eastern Europe and the New Independent States; and some financial services firms and foundations – which operate across a range of countries.

In those countries with well-developed financial education programmes, the government, a government agency, a financial services regulator or the central bank has generally played a vital role in leading and coordinating the initiative. These organisations are usually also the main, or even the only, providers of the resources which are needed to develop and sustain financial education programmes.

Organisations involved in the provision of financial education can play a variety of roles, ranging from laying down requirements or guidance about the teaching of financial education to the provision of materials or making available trained staff to go into schools to help deliver financial education on the ground.

Some private sector organisations, such as financial services firms, have made financial education one of the main themes of their corporate social responsibility activities. Similarly, some charitable foundations include financial education among their objectives. It is important that, where the commercial sector is involved in the provision of financial education, safeguards are in place to avoid any marketing, or the appearance of marketing, of products or services.

Under Malaysia's School Adoption Programme (SAP), more than 7,000 schools have been adopted by a financial institution (a commercial bank, development bank or insurance company). The financial institutions lead activities relating to banking, insurance and basic financial knowledge, as well as providing an opportunity for schoolchildren to experience having a bank account.

Successful programmes generally involve a partnership approach, involving a range of organisations from different sectors, to the delivery of financial education in schools. In the US, Jump$tart is a coalition of some 185 entities, including financial services firms and trade organisations, educational bodies, charitable foundations and consumer and voluntary bodies. Moreover, there are also state coalitions, each of which has its own partners/members.

Length of time financial education programmes have been in place

In the US, financial education programmes have been in place for several decades. For example, the US National Endowment for Financial Education (NEFE) High School Financial Planning Program – which is provided free of charge to schools and organisations in all 50 States, the District of Columbia, and US military installations around the world – was launched in 1984 and since then has reached over 5 million teenagers in 60,000 schools. Prior to that, students were typically required to take home economics (now known as family and consumer science) courses, many of which included a personal finance element. However, in most states, family and consumer science courses are now elective, rather than compulsory, so fewer students are exposed to personal finance education in this way.

The US Jump$tart Coalition for Personal Financial Literacy was launched in 1995 to promote personal finance education in schools and to improve the financial knowledge and abilities of children and young adults, as well as to coordinate the financial literacy activities of a variety of organisations and agencies.

In most other countries, financial education programmes (where they exist) have tended to have begun more recently. And in those countries where financial education programmes have been in existence for some years, there has typically been a greater impetus towards the provision of financial education over the last few years than in the past.

Costs and funding

Little information is available about the costs of financial education programmes. The information which is available tends to relate to the direct funding of particular aspects of a programme – for example, the costs of developing a resource or of providing specific teacher training courses. There is no information available about what are typically much greater amounts of indirect funding (for example, a proportion of the costs of teacher time, where financial education is delivered in the context of another subject; or the notional costs of the time of financial services staff who provide support to schools on a voluntary basis).

Where funding is provided for particular initiatives, it is important that it is made available for a sufficiently long period ahead to allow those involved in the delivery of financial education to plan sensibly. For example, if funding for teacher training were made available for no longer than a 12 month period, those who would need to develop the training programme and promote it to teachers might well feel that there was insufficient certainty about possible future funding to justify the necessary investment of their time.

2. Incorporating financial education into the curriculum

Should financial education be compulsory?

In some states or countries, financial education is a compulsory part of the curriculum, that is schools are required by legislation to provide financial education. For example, in the US, the Jump$tart State Requirements website[5] indicates that, in 2008, three states require at least a one-semester course devoted to personal finance; 15 states require personal finance instruction to be incorporated into other subjects; and while other states have no such requirements, personal finance education is provided in most of them on a discretionary basis. Detailed requirements differ from state to state and can also differ from school district to school district. At the Federal level, the Senate and the House of Representatives have passed Resolutions 126 and 273, respectively, designating April as financial literacy month. A number of states have accordingly recognised April as financial literacy month or have other types of financial education bills pending.

In Canada, financial education is mandatory in British Columbia under a life skills programme (the financial education component of which occupies around 21 hours of class time) at the Grade 10 level; and it is mandatory in Nova Scotia at the Grade 11 level under career and life management (with personal financial life skills - including budgeting, credit, banking – taking up around 15 hours). Other provinces have non-mandatory courses that contain some elements of financial education. Financial management outcomes are included in the mandatory mathematics courses in all provinces, but there is no uniform curriculum across the country.

In Northern Ireland, financial education is compulsory at primary school level as part of mathematics and numeracy and at secondary school level as part of mathematics with financial capability; and it is also delivered through other parts of the curriculum. In Wales, financial education is compulsory for all schoolchildren aged 7-16.

In a number of countries, schools have discretion as to whether or not to provide financial education and, if so, how to set about this. In some of these countries, a significant proportion of schools provide some financial education, but the amount and content can vary widely.

In some countries, the government encourages schools - for example, through guidance - to provide financial education. For example, in England, the government issued guidance to schools in 2000 which encouraged them to provide personal finance education. This guidance specified different types of financial education for children of different ages within the overall age range of 5-16. At secondary school level (that is for children aged 11-16), financial capability has recently been given a more secure place in the curriculum through a new economic wellbeing and financial capability strand, which forms part of revised Personal, Social, Health and Economic (PSHE) education. In addition, financial education is now included in the programmes of study for mathematics; and it will be a context for functional mathematics, when this is introduced into the curriculum from September 2010. While financial education will remain non-statutory, the government has stated that it expects all children aged 5-16 to receive financial education.

The case for making financial education compulsory is that this is the surest way of securing its inclusion in school timetables: given that, typically, curricula are already crowded, it may be difficult to secure space for financial education unless it is made compulsory. Financial education can be made compulsory as a stand-alone subject or as part of other relevant subjects. In either case, however, making a subject compulsory does not necessarily result in high quality teaching and learning. Even in those countries or states where financial education is compulsory, its delivery tends to be patchy.

In view of the pressures on curriculum time, and also of the general thrust of policy in some countries to give schools a significant degree of autonomy in deciding what to teach, compulsion may not be achievable politically – particularly, until such time as a track-record has been developed on the effective provision of financial education on a voluntary basis. So, especially for countries in the early stages of delivering financial education programmes, it may be unrealistic to expect immediate inclusion of the subject in the compulsory part of the school curriculum. Moreover, some experts[6] consider that schools are more likely to deliver high quality financial education if they are willing volunteers. If, however, financial education is not compulsory, there need to be clear incentives for schools to provide financial education and to deliver it well.

Should financial education be a stand-alone subject?

An important related issue is whether financial education should be provided in schools as a stand-alone subject or, instead, as part of other courses.

The case for a stand-alone course is that this gives financial education greatest prominence and is likely to help secure the provision of more time within the curriculum to cover the wide range of financial topics which schoolchildren should ideally be taught. Specialist teachers can develop expertise in the subject and can plan a comprehensive and coherent programme (within the constraints imposed by the time made available to teach the subject). Where financial education is not given dedicated time, there is a risk that its delivery will be incoherent or will not take place.

In many countries, however, it is likely to be unrealistic to secure the inclusion in the curriculum of new, stand-alone subjects, such as financial education. Further, there is a positive case for incorporating financial education into existing courses. This can help to bring financial education to life, enable financial topics to be covered in a wide range of contexts and – to the extent that a stand-alone financial education course would be optional, rather than compulsory – can dramatically increase the number of schoolchildren who receive some financial education.

In many situations, the way forward will be determined by pragmatism. If there is no realistic prospect of securing space in the curriculum for a stand-alone subject – which in many countries is likely to be the position – then the focus should be on identifying opportunities within the existing curriculum for incorporating financial education. Examples can be found of financial education being incorporated within a wide range of subjects, including mathematics, economics, citizenship and related subjects, business and enterprise studies, social sciences, languages, science, geography, history, drama, information and communication technology, home economics and catering, family and consumer science, careers education and work-related learning.

In mathematics, for example, money issues can provide a context for teaching to which students can readily relate. By way of example, students could consider an advertisement for perfumes which shows reductions in previous prices. They could be asked to calculate the percentage reductions, together with the cost per millilitre for each of the perfumes. An advertisement on these lines could also prompt discussion of needs and wants and of whether products or services which have been subject to price reductions necessarily represent good value to the consumer.

In history, discussion of a past example of a Stock Market collapse can provide an opportunity to talk about the role which holders of stocks and shares play; the nature of stocks and shares; how their value is determined; what makes their value rise and fall; what has been their long-term performance; etc. Similarly, students in the US studying the Great Depression can learn about the rise of the modern banking system and the Social Security system.

Students taking a family and consumer science course can learn about how credit works while being taught how to shop for major purchases, like cars and homes. Students taking catering courses can be required to prepare detailed costings for meals they will be preparing and to learn about the importance of staying within a budget.

Integrating financial education into other subjects saves scarce curriculum time; and the integration of financial education into "real world" contexts can help attract students' interest and facilitate their learning.

At what age should children start to receive financial education?

Some experts[7] feel that the best prospect of influencing future behaviour is to reach children while their minds are most open to new concepts, and that this is towards the beginning of their school lives.

There are a number of examples of financial education programmes for children in kindergarten. Activities can include, for example, simulated shopping for toys or for household goods, where children learn about coins and gain an understanding of the value of money; learn about the importance of keeping money safe and that there are choices to be made as to how money is used; and are given simple calculations to perform. This sort of activity can meet a number of wider educational objectives for young children, for example through reading shop signs and writing shopping lists as well as from performing calculations.

Children are able to relate to a wider range of topics as they become older. Clearly, programmes need to reflect the capabilities and interests of children in the age range at which they are targeted.

In many countries, fewer students participate in financial education after the age of 16. Typically, students over that age are able to choose which subjects they study. Reasons why relatively few students who stay on at school after the age of 16 opt to take part in financial education programmes include that the subject is commonly seen as being mathematically complex; and that there is a scarcity of qualifications available to those who take the subject, so students are generally not able to receive any formal recognition for their learning.

3. Aims and content of financial education programmes

Aims

There is general agreement that the purpose of financial education is to help equip students to manage their money well throughout their lives.

In some countries, the relevant authorities have set out what they expect schoolchildren of different ages to be taught. In England, for example, the Department for Children, Schools and Families expects the following:

- at age 5-7: money comes from different sources and can be used for different purposes;
- at age 7-11: to look after their money and realise that future wants and needs may be met through saving;
- at age 11-14: what influences how we spend or save money, and how to become competent at managing personal money;
- at age 14-16: to use a range of financial tools and services, including budgeting and saving, in managing personal money.

The Office for Standards in Education, Children's Services and Skills (Ofsted) (2008) has recently published a two page set of learning outcomes that might be expected of a financially capable 16 year old.

In the US, the Jump$tart Coalition for Personal Financial Literacy has developed National Standards in K-12 (that is from kindergarten to 12th grade) Personal Finance Education, which set out the personal finance knowledge and skills that students should possess. The Jump$tart Coalition intends the standards to serve as a model, or framework, for an ideal personal finance curriculum, portions of which might not be appropriate for individual instructors or students. The standards indicate that a financially literate high school graduate should know how to:

- find, evaluate and apply financial information;
- set financial goals and plan to achieve them;
- develop income-earning potential and the ability to save;
- use financial services effectively;
- meet financial obligations;
- build and protect wealth.

The standards include learning benchmarks for 4th, 8th and 12th grades (roughly, ages 9-10, 13-14 and 17-18).

The draft syllabus drawn up by the New Zealand Retirement Commission sets out four aims:

- Aim 1 - an appreciation of the mindsets applying to financial behaviour;
- Aim 2 - knowledge and understanding of financial information and processes and the impact they have on daily living;

- Aim 3 - personal financial management competencies that encourage confidence in undertaking financial activities;
- Aim 4 - recognition and development of their personal values set which makes it possible for them to achieve their personal goals.

The New Zealand Retirement Commission's draft syllabus contains twelve learning outcomes:

- take responsibility and manage one's own financial well-being;
- exercise long-term thinking, commitment, self discipline and personal responsibility in relation to personal financial management;
- evaluate the consequences of a range of choices with regard to one's goals;
- recognise, understand and apply financial knowledge to meet personal, family and community needs during the life cycle;
- develop, exercise and practise personal financial management skills to achieve personal, family and community needs;
- recognise, evaluate and take responsibility for managed risk taking;
- evaluate income and savings strategies;
- investigate, interpret and communicate key personal financial ideas, using language;
- identify priorities and understand and evaluate the consequences of personal financial choices in the short, medium and longer time frames;
- reflect on personal financial knowledge and apply it to related contexts;
- develop a sense of responsible stewardship for financial resources;
- evaluate legal and ethical implications and considerations.

There is no "right" answer as to what schoolchildren of any particular age should be taught. But it is helpful for expected standards, or learning outcomes, to be set down in each country to help ensure that all involved are seeking to achieve the same aims.

Box 1. Financial education programmes in universities and colleges

There are far fewer financial education programmes targeted at students over the age of 18 than are available for schoolchildren. However, there are some interesting examples of what can be achieved. Some of these programmes provide general information and education or pastoral support, while others form part of academic courses.

In Malaysia, Bank Negara Malaysia has participated in many seminars and workshops in universities and colleges. The main aspects of financial planning which have been highlighted during these sessions are on personal money management, especially on managing educational loans; banking and insurance issues, particularly on loans, guarantors and credit cards; motor and life insurance; investments, get-rich-quick schemes and illegal foreign currency trading; and other current banking and financial issues. The Credit Counselling and Debt Management Agency (which is a subsidiary of Bank Negara Malaysia) is collaborating with universities to incorporate personal finance into the curriculum. Once this has been done, financial education with an emphasis on personal finance will be provided as a mandatory subject to undergraduates from 20 to 24 years old. In addition, over the next two years the Malaysian Financial Planning Council (MFPC) and Permodalan Nasional Berhad (a government owned investment holding company) will be jointly organising financial planning workshops for 10,000 undergraduates at 26 universities. Apart from raising the awareness of undergraduates on the importance of financial planning, the workshops will introduce undergraduates to concepts and skills in personal financial planning. The 26 universities will also incorporate a module of MFPC's Financial Planning programme on "Fundamentals of Financial Planning" as one of the elective papers for undergraduates.

In Singapore, all publicly-funded institutions of higher learning, including universities and polytechnics, have general/cross-disciplinary financial literacy modules, or modules that incorporate financial literacy content. These are open to all students. The Institute of Technical Education in Singapore has also introduced financial planning as a key component in one of its Life Skills Modules. MoneySENSE (the national financial education programme) supplements these initiatives by partnering with the Central Provident Fund (CPF) Board to organise outreach programmes for students in polytechnics and the Institute of Technical Education. These programmes include simple games that convey financial education messages, on-line game competitions using the Voyage of Life on-line game[8] and educational talks by financial industry practitioners. The MoneySENSible Youth Award recognises polytechnic students who have taken a sensible approach to managing their money.

In the US, the National Endowment for Financial Education has developed a website, CashCourse, for colleges, universities and alumni associations to offer to their students and to recent graduates. The website, which is provided free of charge to universities and students and which can be branded by individual universities, was created with significant practical input from students and universities. Over 60 universities and colleges have enrolled. For example, the University of Iowa offers CashCourse as a resource on its Student Credit and Money Management Services Web page; the Ohio State University links to CashCourse in different topic areas, such as Credit and Jobs, within its Financial Life at OSU website; and the Wisconsin Alumni Association has highlighted CashCourse on its students page and has also linked it to each student's My UW account.

Also in the US, Wells Fargo Card Services developed a programme called "Early Intervention Education", which was targeted at first-time card holders at university. The purpose was to improve student cardholders' understanding of responsible borrowing and credit management through directing student cardholders to an internet site containing two lessons and quizzes designed to increase awareness of the importance of building solid

credit. Those who completed the course spent 32.7% more on their credit card than the control group, while doing better on late fee instances (42.6% fewer) and over-limit charges (42.6% fewer) and keeping lower revolving balances (26.5% lower).

At the University of Rhode Island in the US, incoming freshmen enrol in an on-line credit education course as part of freshman orientation. The programme serves as a tutorial, providing an introduction to money management and credit use. The five-section programme uses tailored materials such as worksheets to reinforce the concepts presented during each module. Interested students can also enrol in a certificate programme in Family Financial Counselling and Planning (FFCP). FFCP certificate holders can use their financial literacy skills to find careers in personal financial counselling or planning.

In the UK, the Financial Services Authority (FSA) has developed a Money Doctors toolkit for use by money advisers in universities. The kit contains practical and innovative material to support work done with students - from freshers' week through to graduation. In 2006/07, the FSA worked with 19 universities and in 2007/08 it worked with 50 universities. It aims to embed the Money Doctors scheme in the great majority of universities from 2008/09. Training of, and mentor support for, student money advisers is a key element of the programme: evaluation and feedback from the initial 19 universities was that merely making resources available to them was not sufficient.

The FSA has explained the thinking behind the Money Doctors scheme: "Too often, student advisers and counselors only get to hear about students' financial concerns once they've reached crisis point. But the Money Doctors approach helps advisers broach financial issues before they've become a problem. The toolkit includes ice-breakers, budgeting, part-time work, accommodation and graduate finance – providing a big picture approach to money."

In the further education sector in the UK, some colleges offer stand-alone courses on personal finance and some financial literacy elements are contained within numeracy and literacy provision. In 2007-08, the FSA worked with student services staff in ten further education colleges to create group activities for students to help them deal with issues such as budgeting, financial planning, how to choose financial products and how to stay informed about financial issues. The outcome of this work is a resource called Money for LiFE. This contributes to the FSA's strategic aim that colleges should put in place a planned approach to the financial capability of their students through student services and curriculum provision.

In the US, the 106 land-extension universities are required by legislation to extend the knowledge of the university to people in the area where they live and work to improve agricultural production and family well-being ("co-operative extension"). Managing personal finance is a critical component of family well-being. Programmes in the form of seminars, workshops, and conferences are run at community, state, regional and national levels on such topics as managing credit wisely, basic budgeting, legally securing your financial future and basic investing. Children and young people are among the target audiences. There is a web portal[9], part of which focuses on personal finance and provides consumer information and lessons, interactive financial calculators, more than 1,000 frequently asked questions and an "ask the expert" facility.

In some countries, financial education schemes have been established for young people outside the education system. In Canada, for example, Social Enterprise Development Innovations (SEDI) is piloting a financial capability for youth programme in the province of Ontario. In the UK, the Financial Services Authority (FSA) has funded the development of training programmes for young adults who are not in education, employment or training.

Financial education should focus on attitudes and behaviours, as well as on knowledge and skills

The aim of financial education is that people should manage their money well throughout their lives. So, financial education needs to cover attitudes and behaviours as well as knowledge and skills. This is because, unless those who receive financial education subsequently behave in a financially capable manner, financial education will have failed to achieve its intended purpose.

Financial education should also cover concepts – for example, that financial services firms (as with other types of firm) are looking to make a profit: so, money which a bank is willing to lend you will typically be at a higher rate of interest than the bank will pay you on money which you save with it.

It is not sufficient for a student to understand what, for example, APR means (let alone that APR stands for Annual Percentage Rate); and some would argue that students only need to know in broad terms what an APR includes and what it measures. Instead, students need to have a broad understanding of the risks and benefits associated with borrowing; the main types of credit which are available and the sorts of circumstances in which they might be suitable; the importance of comparing deals and how to source different offers; what factors to take into account in making comparisons; how to assess affordability; the importance of making repayments; possible impacts on the individual's credit score and the implications of this; how to check one's credit score; etc. There are, of course, many other issues to which a discussion on these lines can give rise, including the difference between needs and wants.

Discussions which cover attitudes and behaviours can be challenging for teachers. For example, teachers of mathematics may well have less experience, and therefore less confidence, than (say) teachers of literature in handling open discussions in the classroom on controversial or sensitive subjects.

Care should be taken to avoid criticising, whether directly or by implication, particular lifestyles, especially since some of the students may come from families with those sorts of lifestyles. Behaviour which may seem perverse could in fact be rational, when account is taken of the circumstances in which the family finds itself and their value systems. Care should also be taken to avoid biased comments or sweeping generalisations. For example, a suggestion that "you should always avoid getting into debt" ignores the fact that many people who wish to buy a property to live in need to take out a mortgage in order to be able to do so – as well as failing to take into account the many other circumstances in which the responsible use of credit can be beneficial.

4. Materials and toolkits for use in financial education programmes

What materials and tools are available – and are more needed?

A mass of materials and tools is available to support the financial education of students. For example, Jump$tart's Clearinghouse[10] of financial educational tools lists around 700 resources, including printed materials, on-line resources, CDs, DVDs and games. A number of these include lesson plans, student worksheets, suggested activities and teaching guides and many are available at low cost or free of charge. The pfeg website[11] lists around 150 resources, the

majority of which have been awarded the pfeg quality mark and many of which are freely available or available at low cost.

The Australian Financial Literacy Foundation's website, *Understanding money*[12], lists a range of educational materials, each of which have been assessed, through the Foundation's Essential Elements Financial Literacy Assessment (EEFLA), as being of good quality. In Australia there are three main resources used by all state education departments and sectors:

- in primary schools, MakingCents, an on-line package, has a strong emphasis on literacy and numeracy skills and includes lesson plans, units of work, advice to teachers, games, student worksheets and web-based materials. It includes three programmes, one for each of lower, middle and upper primary school, covering: using money, budgeting and spending, and calculating the cost. The materials were developed to provide detailed support for teachers to teach something they had not traditionally taught. MakingCents also has a successful parent programme, which connects the student, school and community;
- in secondary schools, the Commonwealth Bank Foundation's Financial Literacy Curriculum Resource is an on-line package particularly targeting years 7 to 10. It includes lesson plans, units of work, assessment tools, advice to teachers and web-based materials. It includes 12 modules that have been mapped against each state and territory curriculum;
- the Financial Basics Foundation's Operation Financial Literacy is a 10 module teaching resource aimed at students in Years 9-10 and is supported by detailed teacher notes and student worksheets. The kit contains numerous classroom, internet and research activities, including community surveys. The programme can also be accessed on-line.

The Citi Financial Education Curriculum contains a large number of activities, from kindergarten level upwards. Each activity sets out (among other things) objectives, estimated time requirement, material needed, list of publications which complement the activity, link to an internet activity, teaching strategies, an end of unit evaluation, handouts and overheads and (for older students) a student questionnaire which can be used for pre- and/or post-activity assessments. The curriculum is available in several languages, including Spanish, Turkish, Chinese and French.

The European Commission is developing, as part of Dolceta (an on-line tool for consumer education, which includes a section on financial services which is aimed at adults and teachers of adults) a teachers corner, intended for teachers of schoolchildren up to the age of 18.

For teachers, the range of available material can be bewildering. Both the Jump$tart and the pfeg websites have search facilities which enable teachers to specify by age group the sorts of materials they are seeking and also to search the site by type of activity.

There will always be scope for additional materials which fill identified gaps. However, there have been occasions when well-intentioned organisations have produced materials which merely duplicate what is already available. It is sensible for those bodies which are considering producing new materials to consult national experts to check what is already available and where any current gaps lie.

It is also well worth national experts looking to see what has been developed in other countries before commissioning new materials. While materials produced in one country may not be capable of being used as they stand in a different country (one obvious example is that the unit of currency may be different), it could well be more efficient – subject, of course, to securing any necessary permissions – to adapt materials produced elsewhere, rather than starting from scratch.

The OECD launched in March 2008 an International Gateway for Financial Education[13]. This serves as a clearing house for financial education programmes, initiatives and research world-wide. The gateway includes a section dedicated to schools programmes.

Ensuring the quality and integrity of educational materials

Teachers need to be confident that materials and tools which they are considering using are both effective and are free from commercial bias. At one extreme, they are unlikely to be willing to use materials which have the appearance of marketing literature produced by a financial services firm. They also need to be satisfied about the educational value of materials. However, teachers will generally not have the time, and may not have the relevant expertise, to make these sorts of assessments for themselves. It can therefore be very helpful for a trusted agency to assess materials for use with students and to accredit those which meet standards relating to quality and lack of bias.

In the UK, pfeg invites producers of material and tools intended for use in schools to submit them for accreditation – that is, for the award of the pfeg quality mark. The quality mark is awarded to financial education teaching resources that meet the standards set out in pfeg's published code of practice. The criteria for awarding the pfeg quality mark are that the resource in question:

- is accurate and up-to-date;
- matches curriculum requirements;
- is easily available and adaptable;
- covers an appropriate range of financial topics;
- has been developed in partnership with teachers and tested in schools.

The Australian Financial Literacy Foundation has similarly published a comprehensive set of guidelines[14] which describes the criteria and process for determining whether educational materials are appropriate for listing on the Foundation's website.

How can financial education be made engaging for students?

Finance can be a complex subject. For many adults, it is both worrying and dull. However, there are many financial education programmes, materials and tools which students appear to find engaging. The following are some examples:

- the British Columbian Securities Commission's financial life skills course blends the use of fictional characters with real-life financial activities and decisions in a hands-on, activity-based format. As each financial topic is

introduced, students learn the concepts and information through eight life-stage characters, each of whom is facing different financial circumstances. In a survey published in 2006, 80% of the teachers rated the resource positively and said that they intended to use it again, while 85% of students gave the course a grade of B or higher;

- in Singapore, financial education is delivered to students in fun and interesting ways as part of the MoneySENSE national financial education programme. For example, the Association of Banks in Singapore and MoneySENSE have developed a 30-minute programme which includes an interactive skit Saving – the Sensible Habit (about a bear named TRIFF and his friends), performed by a local theatre group, as well as a quiz. The programme is designed to reach out to primary school students during school assembly periods. It teaches students the difference between "needs" and "wants" and the virtues of living within your means and of saving for a rainy day. Teachers are encouraged to run through a cartoon guide with their students after the programme to reinforce the key learning points;

- Bank Negara Malaysia, in collaboration with the Ministry of Education, created a financial education website[15] as an interactive financial education tool to enhance financial literacy among students. Students can participate in contests, games, quizzes, financial calculations and other activities related to personal financial management. Launched in 2004, the website has attracted a membership of more than 85,000;

- the New Zealand Retirement Commission has a dedicated section on its website, Sorted Kids and Money, with on-line games for children of different ages and supporting information for parents and for teachers;

- Visa and the US National Football League have developed a financial football game, which can be played on-line or downloaded onto mobile phones, in which "students tackle financial questions like professionals in this fast-paced, quiz-style game [which] divides classrooms into two teams that compete by answering finance-themed questions to earn yardage and score touchdowns".

The UK's Office for Standards in Education, Children's Services and Skills (Ofsted) (2008) has quoted a number of examples of interesting ways to provide financial education, including the following:

- a group of students with learning difficulties was given responsibility for refurbishing a room which was to be used for a new school bank. They learned more about banking to inform their design. They then investigated the cost of the materials from different suppliers to find the best value for money and adjusted their design to stay within budget. They placed orders, visited local stores to buy materials and learned how to monitor their spending;

- students on a physical education course were given responsibility for organising and planning the budget for their forthcoming field trip. With guidance from the teacher, the students made decisions about accommodation, menus and transport. They researched the costs and learned about the need to keep the price of the trip within budget and to have a contingency fund;

- as part of an exercise on working out the cost of a foreign holiday, students were set the task of finding out the 'best buy' in travel insurance. They used the internet to investigate different deals by filling out real applications and compared the results with the travel company's price. Students came up with different answers depending on the type of insurance cover they had requested. This led to discussion about what was included in the insurance, the level of compensation and balancing risk against cost;

- students worked with an adviser from the local Citizens Advice Bureau (CAB). The adviser briefly explained the role of the CAB and the types of financial issues it is frequently asked to advise on. Students then worked in small groups on case studies which were based on real problems the CAB had dealt with. Students took on the role of CAB advisers, drawing on their prior knowledge developed in personal finance education lessons and on guidance leaflets provided by the CAB. Some of the groups were asked to present their ideas before the adviser explained the advice she had actually given. Students assessed their own responses against the 'official' advice and some sought clarification as to why their suggestions might not have been appropriate.

Common characteristics of programmes which students appear to find engaging include:

- **relevance to the student**: this helps the student to see the appropriateness to him or her of the financial education programme. This can clearly include financial decisions and actions which the student can make or take; but it does not necessarily mean that the student needs to be able to take action immediately to implement what he or she has learned. For example, gaining a better understanding of how to live on a student loan is likely to appeal to those coming up to university as well as those who have recently started at university. On the other hand, information about different types of pension arrangements is unlikely to resonate with many teenagers.

This is not to suggest, however, that financial education in schools is of no value in encouraging long-term financial planning for retirement. If students become used to planning ahead (for example, saving up for a major planned purchase) they may be more likely to plan ahead for retirement once they have entered the jobs market. And if they understand the value of financial advice, and know where to go for it, they may be more likely to seek appropriate information and advice when the time comes for them to decide how best to save for their retirement. They should also have a better understanding of the sorts of questions which they should ask a financial adviser, rather than simply taking on trust what their adviser recommends.

Popular television programmes or newspaper stories – for example, reports about people who have large numbers of credit cards and who have run up large debts – can also provide a fruitful source of issues to stimulate discussion on how to manage one's money in a responsible way.

- **interactive and experiential**: young people, in their everyday lives, often choose to use materials and tools which are interactive. Experience in a number of countries suggests that, in general, students are likely to find financial education materials and tools which are interactive and

experiential more engaging than those which are not. Examples include engaging students in activities which involve investigating and solving problems to which they can relate. This can involve them in working in groups and presenting their conclusions to their fellow students. The subject matter can be made engaging by relating it to real life decisions, such as choosing the best value mobile phone; planning a weekly shopping budget and then going out and shopping for it; working out a budget for a student at university; or choosing and planning a foreign holiday (which could entail setting a budget; consideration of where to hold money which is being saved for the holiday; how to pay for the holiday and the benefits and risks of using cash, cheques, debit cards and credit cards; exchange rates and the costs associated with exchanging currencies; and the case for different types of insurance).

Other examples of ways in which financial education can be delivered in attractive ways include involving students in practical activities (for example, helping to run a school bank) , arranging for them to take part in financial games (for example, a simulated stock market trading exercise), using attractively presented on-line tools, viewing a play or film, role plays and case studies.

These sorts of approaches are generally considered to be more likely to be successful than formal classroom lectures on, for example, the nature of banks and their services or more traditional ways of teaching practical skills such as writing a cheque.

- **tailoring** to the abilities and interests of the students concerned. A number of the websites which provide information about financial education programmes and materials indicate the age range for which they are likely to be suitable. But the interests and abilities of students of the same age can vary widely. It is also important to take account of any relevant cultural or religious differences or sensitivities.
- **being well taught**: as with other parts of the curriculum, a good teacher can bring a subject to life.

5. Role of main players in delivering financial education to schoolchildren

Teachers and volunteers

Financial education is generally delivered by teachers. It is important, in such cases, that the teacher has the knowledge, skills and confidence to provide effective financial education. There is a risk that (for example) a mathematics teacher who is asked to deliver financial education will pick out the mathematical elements of the issue he or she is teaching, but will not feel sufficiently comfortable to discuss with the students attitudinal and behavioural aspects of the issue. In this sort of example, the mathematical element may be entirely satisfactory, but the student is unlikely to receive effective financial education.

Financial education is sometimes delivered by financial services staff or others (for example, staff of consumer advisory bodies or community-based

financial educators) with relevant experience, often in conjunction with a teacher. Outsiders can bring technical knowledge and first-hand experience of dealing with the subjects they are covering and can provide a different perspective on issues. On the other hand, some may lack expertise in delivering information and messages in a classroom context, which could adversely affect the effectiveness of the intervention. Some schools have faced practical difficulties in arranging for outside experts, who may in principle be willing to help, to commit time some weeks in advance. Schools can also have concerns that the involvement of someone from a commercial body could be perceived as a marketing ploy.

Some experts[16] feel that financial education will generally have a greater impact on students if it is delivered by teachers or – where it is delivered by outsiders – if the teacher is present and is clearly engaged. This is because the teacher knows the students' abilities and backgrounds and understands how to make topics engaging for them and how to deliver appropriate learning outcomes. The active involvement of teachers can also help to ensure that financial education continues to be delivered within the school in circumstances where outside experts are no longer available to come in to the school.

In the UK, pfeg, in conjunction with the Institute for Chartered Accountants in England and Wales (ICAEW) and GE Money, has developed a website which aims to help volunteers from the financial sector work effectively with schools in delivering personal finance education. The website helps volunteers understand issues such as the curriculum, school culture and current challenges and opportunities in developing financial capability. Volunteers are given ideas and suggestions about how they can use their knowledge and experience to contribute to student learning and guidance on how to get the most out of their relationship with a school. The website also enables volunteers to match their individual expertise to the needs of local schools and enables schools to register for support from a financial sector volunteer. The website is currently being piloted with volunteers from ICAEW and GE Money, with a view to its being available to other organisations later in 2008.

In the US, Junior Achievement (JA), a non-profit organisation, provides trained volunteers, who mainly come from the business sector, to offer "real-world" perspectives on financially literate behaviour. These are provided in the course of frequent, coordinated classroom visits. This programme has reached around four million students.

In Ireland, senior cycle students (generally, aged 15-17) have the option of studying a practical programme with a strong vocational emphasis called the Leaving Certificate Applied (LCA). Social Education, a compulsory subject studied as part of the LCA, addresses a range of personal finance issues that are examinable. In the course of studying the relevant module, the teacher and students are required to invite a representative of a local financial institution into the classroom for a round-table discussion that relates to personal finance. The vocational nature of the LCA programme also allows for some discussion of the nature of work in the financial services industry.

Availability of teacher training and support

Teachers are like others in the population: many are not very capable or confident when it comes to managing their money. Without training and support, they are unlikely to be able to provide good financial education and will

probably avoid covering the subject – or, at least, covering the most challenging aspects of the subject – if they can.

While teachers who deliver financial education do not need to have in-depth knowledge of financial products and services, they do need to understand underlying financial management principles, to be able to relate financial education to everyday situations and to know where to go for reliable and impartial information on topics on which they do not themselves have detailed knowledge. They also need to be comfortable in dealing with sensitive personal, and sometimes controversial, issues; to have the ability to empathise with young people's interests and concerns; and to be able to make effective use of a wide range of teaching methods – for example, group work, discussion, simulations, games and the internet – and to have the ability to incorporate external contributors into the learning process. And they need to know how to access high quality materials and tools to enable them to deliver effective financial education in the classroom.

So, teacher training and support needs to provide teachers with a grounding in money management skills and knowledge, to equip them to deliver financial education in an engaging and effective manner, and to show them how to access relevant materials and tools. This will help teachers to feel confident and competent, which will in turn help to ensure that programmes, resources and initiatives are used effectively in the classroom.

To the extent that financial education is an optional subject, it is more likely that schools and individual teachers will opt to cover the subject if they can be confident that they will be supported by effective training and other support and that high quality materials and other tools are available on which they can draw.

There are many examples of training schemes – both for initial teacher training and continual professional development – which have been developed to equip teachers to provide high quality financial education. There are also examples of other sorts of support arrangements which have been put in place:

- in Australia, the Financial Literacy Foundation established a national Reference Group to develop a National Consumer and Financial Literacy Professional Learning Strategy in order to support teachers in the delivery of effective consumer and financial literacy education. The Foundation is currently developing a professional learning package and support materials to build teacher capacity and confidence in delivering the Consumer and Financial Literacy Framework. The package, which includes a Facilitators Guide and a Teachers Guide, was published in June 2008. The accompanying website[17], which will become live in June 2008, will support the package and the training of teachers nationally;

- in Malaysia, Bank Negara Malaysia, in collaboration with the Ministry of Education and financial institutions, arranges workshops to train teachers in charge of Student Financial Clubs (SFCs). The training is part of the teachers' continuing professional development. The selection of teachers to attend the workshops is at the discretion of school headteachers. The Ministry of Education and financial institutions involved with individual schools have observed that teachers who have attended the workshops are motivated and more excited in conducting financial education activities: hence, Student Financial Clubs at their schools tend to be more active and membership has increased. The

knowledge gained during the workshops has also helped teachers in managing their own personal finances. In addition, a guidebook for teachers in charge of SFCs, prepared by Bank Negara Malaysia in collaboration with the Ministry of Education, and lesson plans for teachers with outline modules and activities on financial education that can be conducted during SFC meetings, have been distributed to all schools;

- In Singapore, the Ministry of Education (MOE) has developed resources for teachers to enable them to include financial literacy concepts in relevant subjects at the primary and secondary school levels. MOE provides teachers with lesson plans as well as a CD-Rom entitled "Promoting Financial Literacy in Schools" which comprises definitions, illustrations, case studies, templates and statistical information. Sessions are also organised for teachers to share their best practices to deliver financial literacy lessons effectively. In addition, MOE works with MoneySENSE and the CPF Board and collaborates with other external organisations such as the National Institution of Education and Singapore Management University to develop financial literacy seminars and workshops for teachers;

- in British Columbia, the securities regulator, the British Columbia Securities Commission (BCSC), has prepared a comprehensive financial life skills programme for teachers to use free of charge. BCSC trains teachers to use the programme through a "webinar" (an interactive, real-time, web-based training programme);

- in the US, teacher training, provided by Cooperative Extension educators and others across the country, is a critical component of the NEFE High School Financial Planning Program;

- in the state of Wisconsin, the National Institute of Financial & Economic Literacy, in partnership with the Wisconsin JumpStart Coalition, offers a series of week-long teacher-training courses during the summer on a college campus. The aim is to provide teachers with content, materials and skills to teach and promote financial literacy in their classrooms and communities. The curriculum is delivered by a mix of business and academic professionals;

- in England, pfeg offers a comprehensive programme of support for teachers of those aged 11 and above, as part of a programme called Learning Money Matters. The aim is to have supported 4,000 of the 6,000 secondary schools in England by 2010/11. Teachers are given the opportunity to work with pfeg's trained consultants, who are experts in how to deliver effective financial education. In addition, pfeg has recently launched a programme, called What Money Means, for teachers of children aged 7-11. Funded by HSBC Bank, this programme seeks, among other things, to place 10,000 of HSBC's own employees to support teachers in schools.

- among the resources available to teachers in New York State are two Practical Money Skills for Life (Visa USA) courses, each of which comprises self-guided online training followed by written coursework which the teacher sends to an assessor.

6. Assessing and recognising student progress and good practice in school

Assessing student progress and qualifications in personal finance

Generally, there seems to be little specific assessment made of students' progress, except where they take a qualification in personal finance. Where financial education is delivered as part of other subjects, those subjects may well be assessed; but there is no specific assessment of the financial education elements. In some cases, students may be asked to complete evaluation questionnaires; but these often focus on how interesting and relevant they found the course, rather than seeking to test students' learning.

Learning outcomes can be set, and progress can be measured, in the absence of formal examinations. But formal courses, accompanied by examinations and qualifications, can help to ensure a coherent curriculum and a clear focus on learning outcomes. Nevertheless, governments and schools may well decide that there is not sufficient room for another qualification, except for those students who opt to take a specialist course in personal finance.

In most countries, there are few if any examples of specialist qualifications in personal finance. In the UK, however, there is a growing number of specialist qualifications: for example, the IFS School of Finance offers four levels of qualifications for those aged 14-19; and the Award Scheme Development and Accreditation Network (ASDAN) offers personal finance awards which contribute towards nationally recognised certificates. The Assessment and Qualifications Alliance (AQA) has developed free-standing mathematics qualifications, two of which focus on personal finance as contextual areas for assessment. A third advanced level qualification is under development. In Northern Ireland, students are required to be assessed on mathematics, the syllabus for which stipulates areas of financial knowledge and understanding.

In the Republic of Ireland, students studying the Leaving Certificate Applied (LCA) are examined in all compulsory subjects, including social education. Elements of the social education course address personal finance issues and are, as such, examinable. Similarly, students at junior cycle (aged 12-15) and senior cycle (aged 15-17) studying the mainstream Junior Certificate and Leaving Certificate who choose to study business related courses are examined in certain elements of personal finance.

In 2007, the US Treasury's Office of Financial Education worked with four economists to develop a new assessment tool for high school students older than 13 years of age. For 2008, Treasury plans to use the tool to roll out a student recognition programme called the Financial Literacy Challenge. Designed to widen the base of support for financial education in US high schools, the voluntary Challenge will be used to determine and reward high levels of financial literacy. The Challenge is based on national personal finance education standards. The 35 question, on-line test will be offered from late April to mid-May. Teachers will be invited to select any day within the testing window to participate. Students with scores in the top 25th percentile of national scores will be recognised by Treasury.

Awards for local programmes

The availability of awards for successful financial education programmes can help to incentivise schools, teachers and students.

Bank Negara Malaysia collaborates with state education departments to make awards to active schools, teachers and students in Student Financial Clubs in every state. The Bank also provides prizes to schools that register the most number of students as duitsaku.com members. In addition, financial institutions organise competitions at their adopted schools and provide prizes for students who diligently plan their finances using the Pocket Money Book. State Education Departments organise co-curriculum award programmes annually for outstanding schools, teachers and students.

In England, Wales and Scotland, the Royal Bank of Scotland, in association with pfeg and the Daily Telegraph, launched in 2008 an Awards Scheme[18] with categories for:

- school award for best all-round approach to personal finance education (PFE);
- school award for most original idea in the delivery of PFE;
- award for most innovative use of teaching resources in PFE;
- teacher award.

In the US, the federal government recognises best practices and provides grants. For example, the Department of the Treasury's Office of Financial Education evaluates financial education programmes to determine whether they qualify for a John Sherman Award for Excellence in Financial Education. The analysis is based on the Eight Elements of a Successful Financial Education Program, which are criteria established by the Office of Financial Education.

Section 2

Review of literature on the effectiveness of financial education programmes in schools

1. Challenges in undertaking research

In many of those countries which have developed financial education programmes, little or no research (either on financial education programmes for students or more generally) has been undertaken into the effectiveness of those programmes (see, for example, O'Connell (2007 and Lyons, Palmer, Jayaratne and Scherpf (2006). This may be in part because, in several countries, financial education programmes are in their infancy and the focus to date has been on designing programmes and getting them under way, rather than on putting in place research programmes.

The relative lack of research in this field is not sustainable in the longer term since, in the absence of research, evidence will not be available to policy makers about what works well. It will therefore be difficult for them to make informed judgements either on how much priority to give to, and how much resource to provide for, financial education; or on how to focus financial education programmes so that they are as effective as possible. Other funders will also wish see evidence that the programmes they are funding are having a positive impact.

Most of the research which has been conducted on the impact of financial education provided to students has focused on the financial education of students in schools. This is not surprising, given that the overwhelming majority of financial education of students has been aimed at those of school age, rather than at students in colleges or universities.

Research on the impact of financial education programmes is intrinsically challenging. Among the reasons for this are:

- there is no general agreement about what a financially educated student, of any particular age, should be expected to know or about how such a person – either currently or in the future – ought to behave. What constitutes financially capable behaviour can depend, to a considerable extent, on the individual's particular circumstances;
- there is similarly no consensus on what should be measured. Evaluations range from knowledge about various financial matters through to more subjective measures such as attitudes, satisfaction with the course, self-confidence in managing one's money and self-reported behaviours (either actual or intended);

- both those running programmes and those participating in them may have little incentive to take part in evaluation exercises. Educational bodies may be unwilling – for example, as a result of timetable pressures – for students to be tested on what they have learned through financial education programmes. Moreover, those individuals who are motivated to participate in evaluation exercises, particularly longitudinal studies, may not be typical of the generality of those who participated in the programme in question;
- financial education programmes are designed to influence future behaviours, rather than merely current behaviours. However, participants may be reluctant to provide information about their personal finances, despite being given assurances of anonymity. Furthermore, there may be ethical objections to the provision of the sorts of personal data which would enable longitudinal studies to be undertaken. It can be difficult to keep track of people's contact details over a period of time. And it is also possible that knowledge by individuals that they will be participating in future evaluations could influence their actual behaviours;
- it can be difficult to establish both a causal link, and the direction of causation, between participation in financial education programmes and participants' knowledge, attitudes or behaviours.

There is, as yet, no clear evidence as to what works best. Nevertheless, a number of research studies have been undertaken which, taken together, offer insights into what seem likely to be promising ways forward.

2. Some key studies

Much of the research which has been undertaken has taken place in the US. Since 1997, the Jump$tart Coalition has undertaken a series of surveys of 17-18 year old High School pupils who have taken a financial education course. From 2000, the survey has been conducted every two years. The survey comprises around 50 multiple-choice questions,of which 30 are the core financial literacy questions and the remainder are to establish information about the respondent . The financial literacy questions, which are designed to test financial knowledge, attitudes and behaviour, cover four broad areas:

- income;
- money management;
- saving and investing;
- spending and credit.

The test is administered to thousands of pupils drawn at random from schools which opt to participate in the survey. Averages score have been low each year the survey has taken place and have declined overall since the survey was first undertaken:

1997 – 57.3%
2000 – 51.9%
2002 – 50.2%
2004 – 52.3%
2006 – 52.4%
2008 – 48.3%

On the other hand, the proportion failing the exam (*i.e.,* those who scored less than 60%) fell from 65.5% in 2004 to 62% in 2006.

Jorgensen and Mandell (2007) found that, in the five Jump$tart surveys which had been conducted in the period 1997-2006, the scores of native Americans had been consistently among the worst in the overall population.

Mandell (2008b) observes that "one of the strongest, and most depressing findings from the Jump$tart surveys is that students who take a full semester high school class in money management or personal finance are no more financially literate than students who have not taken such a course".

On the other hand, some questions in the Jump$tart survey seem specific to a course of learning, rather than being necessary for good financial practice[19]. The surveys also rely on students' self-reporting, which may not be accurate, of whether or not they have received financial education. Moreover, they do not distinguish between different types of financial education programmes.

The 2006 survey enabled two possible reasons why money management courses had not been more successful to be examined. The first was that students might not appreciate the personal responsibilities which they would face in the future: the survey indicated that this was not generally the case. The second was that teachers might focus on the facts of financial management, to the exclusion of the wider economic picture. On this, the survey found that those who took an economics course did a little better than others in the financial literacy exam.

Some commentators have suggested that financial education programmes are likely to be most successful if they focus on financial decisions which students will shortly be making. However, Mandell (2006) found, on the basis of an analysis of data from Jump$tart surveys, that, of the students who had purchased a product, those who had taken a financial education course did no better, on the whole, in respect of questions relating to the product than those who had not taken such a course.

Mandell (2008a) analysed a pilot study in which children at ten public middle schools in the Chicago area watched an improvisational play, performed by professional actors, which illustrated the benefits to young people of saving. The actors first talked with the students so that they could adapt the play to local circumstances. The students completed questionnaires, both before and after watching the play, containing factual, attitudinal and behavioural questions relating to saving. Mandell found that students demonstrated a small increase in knowledge (an increase in average scores from 64.1% to 68.9%) after having seen the play and that this was most pronounced among younger students, in the 6th grade (whose scores increased from 54.1% to 64.3%). He also found some positive attitudinal change, but was not able to find behavioural differences in terms of their savings behaviour period in the most recent month. Mandell makes the point that this initiative was cost-effective, in that the play was put on for a large audience and lasted for only one hour.

One element which has consistently been associated with higher scores in the Jump$tart survey is a stock market game (Mandell, 2008b). Since 2000, students who have taken part in the game have achieved an additional 3-4 percentage points compared with their peers. Mandell suggests that the use of activities which are interactive, fun and relevant could help to raise financial literacy levels somewhat.

Mandell & Klein (2006) found that motivational factors had a significant and positive relationship with financial literacy. A conclusion which can be drawn from this is that financial education courses should place emphasis on the benefits, in terms of future lifestyles, which successful money management can bring and keep stressing to students the importance of being financially literate to safeguard their futures.

Bernheim, Garrett and Maki (1997) compared US states which required the provision of consumer education (around one-half of which specifically required the provision of personal financial education) with those which did not do so. They found that (based on self-reporting by survey participants) savings rates were approximately 1.5 percentage points higher for those adults who, when they were at school, had entered the affected High School grade five years after the imposition of a consumer education mandate, compared with those who had not been exposed to such a mandate. The authors suggest that early financial education may, among other things, increase an individual's comfort and familiarity with financial matters, thereby removing psychological barriers which impede proper decision-making: they draw an analogy with the development, at an early age, of computer literacy, which appears to have a long-term impact on an individual's general level of comfort with computers. It is noteworthy that not all of those in the study who received consumer education will have received a financial education component: the study does not differentiate between those who did, or did not, receive financial education as part of a consumer education course.

On the other hand, Mandell (1998) found that students in states which mandated the teaching of consumer education or personal finance did not, on average, achieve higher financial literacy scores than their contemporaries from states where there were no such mandates.

However, Tennyson and Nguyen found that, while financial education mandates are not generally associated with higher students' scores, students in states which required specific financial education course work scored significantly higher than those in states which did not do so.

Mandell (2005) found, on the basis of an analysis of the 2004 Jump$tart survey, that while students who take a course in money management or personal finance may not become more financially literate, as measured by test scores of what they know, they are more likely (according to self-reported behaviours) to save. He commented that “Perhaps we have focused too much of our time and resources on measuring financial literacy, per se rather than measuring other, more important, output variables, such as savings, spending and credit behaviour. Or perhaps, we should utilise a broader measure of financial literacy, which includes positive financial behavioural changes as an output.”

Boyce and Danes (1998) evaluated the National Endowment for Financial Education (NEFE) High School Financial Planning Program. This aims to teach students about basic financial planning concepts and to illustrate how these concepts apply to everyday life. Boyce and Danes found that 29% of participants started saving and 15% started saving more. Comparing financial knowledge and behaviours 3 months after the end of the programme with those before starting the programme, 37% had improved skills for tracking spending, 47% knew more about the cost of credit, 38% had improved their knowledge of investments and 38% felt more confident about managing their money. These

findings were based on students' answers to questions about eight financial behaviours, three questions to test their financial knowledge and two questions about their financial confidence. The questions were administered before they participated in the programme, immediately after this and three months later. Immediately after studying the curriculum material, there was a statistically significant increase on all the financial knowledge, behaviour and confidence questions. Three months after completing the curriculum, students had statistically significant increases, compared with immediately after they had completed the curriculum, on each of the questions: students had put into practice (particularly through maintaining a savings account), during this period, what they had learned through the curriculum. In addition, teachers reported marked improvements in financial knowledge, attitudes and behaviour of students following their participation in the programme. Over two-thirds of the teachers who responded said that they were very satisfied with the content of the curriculum, about 60% felt that the curriculum was relevant to their students and about 50% were quite satisfied with their own confidence in teaching personal finance.

A later study by Danes (2004) of the NEFE High School Financial Planning Program Curriculum similarly found that students reported significant improvements in their knowledge, behaviour and confidence immediately after they had studied the programme and that, three months later, the improvements had continued and even increased.

Hilgert, Hogarth and Beverly (2003) found that financial knowledge was positively correlated with (self-reported) recommended financial practices. However, the authors pointed out that the research did not establish the direction of causation (that is whether better knowledge led to more capable behaviours or, on the other hand, whether those who were more financially active acquired more knowledge as a result).

Varcoe and Fitch (2003) evaluated the “Money Talks: Should I be Listening” curriculum, developed by a University of California Cooperative Extension team. In order to develop a programme which teenagers would readily use, teenagers were surveyed prior to the development of the programme to establish what topics they thought were relevant to them, what sort of educational formats appealed to them and when they would like to receive information. The findings indicate that the programme which was then developed had improved students' knowledge and had led to changed behaviours. The authors suggest that teenagers are more interested in learning about issues which they see as directly relevant to them at that time. They also consider that it is important for materials to be interactive (for example, interactive games and videos).

Fabrizio, McLaughlin & Associates evaluated Visa’s Practical Money Skills Program (2005). A control group and a test group of high school seniors were surveyed in Spring 2004 on basic knowledge of personal finance matters. The test group was then exposed to a three-hour seminar, using Visa’s Practical Money Skills Curriculum, during May-June 2004. Both the test and control groups were re-contacted three times over the following six months or so, when the individuals were either attending college or were in the work force. The test group showed increased knowledge, from 67% to 81%, following the instruction and performed better than the control group on other aspects which were measured (for example, whether they currently had a budget; and spending beyond their means).

In the UK, research has been undertaken into the effectiveness of the Excellence and Access programme, which was run by pfeg (Personal Finance Education Group). This programme has now been superseded by the Learning Money Matters programme, but the two programmes share many of the same characteristics.

The Excellence and Access programme sought to increase teachers' skills and confidence in delivering personal financial education by providing practical support for teachers through advice, training and teaching materials. In doing so, the project aimed to help teachers to:

- identify young people's attitudes to risk and money management;
- build young people's financial skills, judgement and confidence;
- equip young people with the ability to make informed and independent financial decisions.

The evaluation used both qualitative and quantitative research methods. Taylor (2004) found that the project "reached and influenced a large number of teachers and students, raising teacher confidence and developing a rich and extensive source of materials and guidance. It also demonstrated that it was possible to improve students' financial awareness". Students who had participated in the project's activities were enthusiastic about, and enjoyed, personal finance work. Similarly, teachers who had participated were enthusiastic and committed. The research also found that young people's experiences outside school produced firmly held views and beliefs on financial matters. The questionnaires administered to teachers were based on self-assessments of, for example, their confidence and skills. Similarly, questionnaires were administered to pupils designed to assess their levels of confidence in financial matters: this demonstrated that pupils generally lacked confidence. While, therefore, the results of the evaluation were positive, there was no quantitative measure of the impact, in terms of behaviours, which participation in the programme had had on either pupils or teachers.

Learning Money Matters – the financial education programme which pfeg is currently delivering – is being evaluated by the National Foundation for Education Research (NFER). Early results indicate that 99% of teachers had been very or quite satisfied with the support give by pfeg consultants, in particular in terms of access to resources and tailored help in putting together a personal finance education programme.

Also in the UK, the IFS School of Finance has developed qualifications in personal financial education, aimed at pupils aged 14-19, which are available to all schools and colleges which choose to make use of them. The IFS commissioned research into the impact of these qualifications on students' careers and aspirations. The findings were based on the 2004/05 cohort of a three year longitudinal study. The qualifications mainly attract those pupils with a vocational orientation towards the subject, though they also attract some students who are more academically oriented. Davis *et al.* (2006) found that the IFS personal finance course impacted positively on students':

- personal financial management (for example, 50% of course participants said that they had made changes to the way in which they spent money; and there was a reduction in the proportion of students who owned one or more credit or store cards);

- financial "self-efficacy" (*i.e.*, beliefs about one's own ability to successfully perform a task) and knowledge (for example, 80% of course participants reported that they understood money issues better since undertaking the course);
- expected choice of subjects to study when going on to higher education;
- intention to consider pursuing a course in financial services.

The above findings were based on questionnaires administered to students who were currently taking the course. The findings were broadly reaffirmed in a follow-up survey conducted six months after students had completed the course (that is the benefits were not merely transitory).

In England, the Office for Standards in Education, Children's Services and Skills (Ofsted) (2008) undertook a small survey of schools and colleges in 2006/07. This was not a formal academic study, but was designed instead to identify examples of good practice. Although the sample of schools and colleges selected for the study was skewed towards those where Ofsted expected to see examples of good practice, its overall conclusion was that the quality of provision of financial education varied considerably between schools. It concluded that the most important factors underpinning good practice were:

- senior managers demonstrated a strong commitment to personal finance education for all students;
- a member of staff, often at a senior level, had responsibility for the development of personal finance education across the school or college;
- dedicated curriculum time was provided, often supplemented by work through other subjects and "off-timetable" days;
- teachers were confident in their knowledge of personal finance and used contexts that were relevant to students;
- lessons engaged students in relevant and meaningful tasks and involved them in discussion and debate;
- effective use was made of resources, including the expertise of external agencies.

Russell, Brookes and Nair (2006) reported on their evaluation, in 2005, of a financial literacy trial programme at a Melbourne secondary college for students in years 7 and 8. The main aim of the programme was to increase students' knowledge and understanding of financial issues relating to mobile phones and credit cards. Around 60% of the students found the lessons very useful or useful; 94% reported an increase in their understanding of mobile phone plans and charges; and 95% reported an increase in their understanding of credit cards. There were also indications that participants in the programme were keen to learn more about other topics which would help them to manage their finances better now and in the future.

This appetite for financial education is also borne out by Capital One's 2006 back-to-school survey in the US, which found that 49% of teenagers would like to learn more about money management, but that only 14% had experienced a financial education class in school.

3. Conclusions

Some studies indicate that financial education has had little or no impact on recipients. In particular, in each of the Jump$tart surveys which have been conducted since 1997, the average score has been less than a pass mark and has been less than the average score achieved in 1997. Those who have taken a financial education course have been found to be no more financially literate than their peers.

On the other hand, some other studies have suggested either that particular programmes have had a positive impact on recipients' financial knowledge or have increased participants' propensities to save in later life.

So, is the glass half empty or half full? It seems reasonable to conclude that the glass is half full and has the potential to become a good deal fuller in the future. The reasons for this view are as follows:

- in many countries, financial education is in its infancy and research into how best to deliver it is – if it exists at all – barely out of the starting gate. It would certainly be premature to conclude, on the basis of research to date, that financial education has no place in educational establishments. More generally, there seems no reason to reach the view that while a whole range of other subjects, many of which have little or no obvious direct relevance to the well-being of students who study the subject, can usefully be taught in schools, financial education cannot be delivered effectively;

- some of the research which has been carried out to date has treated financial education as if it were homogeneous: that is, it has not distinguished between different types of programme. It is reasonable to assume, however, that programmes will vary in their effectiveness. There is an urgent need for a much fuller range of research to be carried out than has been undertaken to date in order to determine how to deliver financial education most effectively – which types of programmes work best for different types of target audience. And there is a need for more research into the medium- and long-term impact which financial education, of different kinds, has on actual behaviour. It is good practice for research to be designed into a programme from the outset, rather than for it to be grafted on to a programme after its inception;

- in view of the detriment caused by poor levels of financial capability, the impact of even small improvements would, when aggregated across the population as a whole, be significant;

- there is evidence, some of it largely anecdotal, from teachers that they have themselves become more confident about providing financial education to their students as a result of participating in well designed programmes and that their students have benefited from being exposed to these programmes. While it is possible to dismiss some of these findings as lacking rigour, it seem reasonable to give weight to the views of teachers, bearing in mind their broad experience of what constitutes an effective educational intervention.

Nevertheless, further evaluation and research is needed to provide a more solid basis for the view that the right kinds of financial education can, if delivered well, provide real benefits.

Section 3

Draft recommendations

The draft recommendations below are intended to assist those working in the field of financial education for students. They take account of the experience of those countries which have been surveyed as part of this study. They also draw on the OECD's earlier work on financial literacy, notably, its survey *Improving Financial Literacy: Analysis of Issues and Policies* and, in particular, its *Recommendation on Principles and Good Practices for Financial Education and Awareness*, adopted by OECD governments in 2005. One of the key Principles is that "Financial education should start at school.....People should be educated about financial matters as early as possible in their lives."

1. Financial education for students should be provided as part of an overall strategy to improve financial capability

A range of support needs to be provided – ideally, comprising education, information and advice – in order to meet the challenge of equipping people to manage their money well. Financial education programmes for students can play an important role. But in order to ensure that support is available for all groups within society, this should be within the context of an overall strategy – preferably at national level – to improve financial capability.

Leadership and coordination

2. Priority should be given to persuading policy and educational decision-makers about the importance of providing financial education to students

In order for financial education to be provided to students, policy and educational decision-makers must be willing to provide room for it in the curriculum. It is essential, therefore, to identify the key decision-makers – whether at national, regional or local level – and to persuade them to incorporate financial education within the curriculum and to provide other necessary support for the delivery of effective financial education.

Among the factors which are likely to be taken into account by decision-makers – and which those seeking to persuade them should therefore also take into account – are whether financial education would contribute to legislative or other requirements relating to the contents of school curricula; and whether high quality materials, together with training and other support for teachers, are readily available – and, if so, at what cost.

3. There needs to be clear leadership and coordination at national level and at other key levels, including in individual educational establishments

Without an overall strategy and a credible leader within a country, efforts to provide financial education are liable to be piecemeal and duplicative and to lack an effective focus for communication with decision-makers and other stakeholders. Leadership can be exercised by government, a government agency, a financial services regulator or the central bank. These organisations are usually also the main, or even the only, providers of the resources which are needed to develop and sustain financial education programmes. Effective leadership and coordination is particularly important given that, typically, a wide range of partners and stakeholders are involved in the development and delivery of financial education programmes.

For much the same reasons, there also needs to be clear leadership and coordination within individual educational establishments. Without this, educational provision within the establishment is liable either to fail to take place or, in so far as some sort of provision occurs, to be uncoordinated and ineffective.

4. A wide range of organisations have an interest in seeing improvements to current levels of financial capabilities: they should be encouraged to contribute to the provision of effective financial education

Governments, financial services regulators and the financial services sector, as well as individuals themselves, stand to benefit if people are better equipped to manage their money well. In addition, financial education can help to bring to life other educational subjects. There are therefore many organisations which potentially have an interest in contributing to financial education initiatives.

Relevant organisations – which could include relevant government departments and non-governmental organisations, regulators and central banks, financial services firms, foundations connected with the financial services industry, utility companies and mobile phone providers – should be encouraged to get involved.

There need to be effective arrangements to give teachers confidence that materials and tools produced, or funded, by commercial organisations are free from commercial bias and marketing devices (such as excessive use of company logos). Arrangements to achieve this can be incorporated within accreditation arrangements (see Recommendation 12 below).

Consideration should also be given to establishing arrangements to match trained volunteers with individual educational establishments.

Embedding financial education in the curriculum

5. Where possible, financial education should be included within the school curriculum as a compulsory element. It should either be included as a stand-alone subject or should be incorporated within other subjects

There are many competing demands on schools' curricula. The surest way of securing a place for financial education is for it be included as a compulsory part

of the curriculum. However, this may not always be achievable, particularly in countries where financial education has yet to build up a track record of successful delivery. In such instances, the case for making the subject compulsory should be kept under review.

The incorporation of financial education as a stand-alone subject ensures that there is a clear focus on the subject. On the other hand, unless financial education is made compulsory, this could reduce the number of students who receive financial education. A course focused on financial education could be seen by students as boring and not relevant to them. An alternative is for financial education to be incorporated into other subjects, such as mathematics, economics, citizenship, business studies and history. In such cases, it is important that it is not merely (say) good mathematics which is provided, but also good financial education.

6. Financial education should be provided to schoolchildren from as early an age as possible and should continue to be provided as they progress through school

As with other subjects, there is advantage in beginning financial education at an early age and continuing to provide financial education as the student progresses through school. In that way, schoolchildren can build an understanding over a period of years. For pupils of any age, the subject matters and materials used need to be selected so that they are suitable for the abilities and interests of the pupils concerned and so that any cultural or religious differences or sensitivities are respected.

7. Students should receive a planned, coherent and comprehensive programme of financial education

Financial education programmes need to be carefully planned so that students receive a coherent programme which covers a comprehensive range of subjects, rather than focusing only on a few issues.

8. Financial education should be provided in ways which students will find relevant and engaging

Students are much more likely to take an interest in financial education if it is presented in a compelling and appealing manner and if they can see that it is relevant and useful to them, either immediately or in the foreseeable future. Conversely, materials or tools which are dull or of little apparent relevance are unlikely to be effective.

Among the characteristics of programmes which students seem to find engaging are that they are relevant to the lives of the students, interactive and experiential, tailored to the interests and abilities of the students and are well taught.

Financial education is likely to be most effective if students receive the lessons over a period of time, from a variety of sources and in a variety of ways as part of a coordinated and coherent programme.

9. There should be a clear focus on developing financially capable behaviours and responsible attitudes, as well as on developing knowledge and skills

The purpose of financial education is to improve people's understanding and to develop their skills and confidence to manage their money well throughout their lives. It is important that financial education initiatives should include a clear focus on attitudes and behaviours and not merely on knowledge and skills. Little will have been achieved if people are equipped with the requisite knowledge and skills, but they fail to put these into practice.

Supporting teachers

10. Teachers should either deliver financial education programmes themselves or, if a programme is delivered by others, should be clearly engaged in the process

Outside experts can play a useful role in the delivery of financial education in the classroom. But while their technical knowledge and first-hand experience of dealing with the subject can be valuable, they may lack expertise in delivering financial education in a classroom context. Financial education is likely to be most effective if it is delivered by teachers or – where it is delivered by outsiders – if the teacher is present and is clearly engaged.

11. Effective arrangements should be made to provide training for teachers, both as part of initial teacher training and as part of existing teachers' continuing professional development

In order for financial education to be effective, teachers (or other providers) need to have the necessary competences and confidence to teach it well. Training should be included, for those teaching relevant subjects, in initial teacher training courses. But this is not sufficient on its own. Training needs to be provided also to existing teachers: many will not have covered financial education as part of their initial teacher training; and even those who had received relevant initial teacher training are likely to benefit from refresher courses from time to time, including to give them the opportunity to learn about new techniques and methods for delivering financial education. Teachers need to be comfortable in discussing issues money issues with students in circumstances where there are often no “right” answers.

12. Teachers need to have ready access to materials and tools which can help them to provide effective financial education

It would be unrealistic to expect that many teachers will have the time, expertise or inclination to search for the most effective materials and tools to support financial education initiatives. Instead, there should be a single source (or, if more than one, a small number of sources) of materials and tools which teachers can be confident about drawing on. This source can act as a clearing house. The source (or sources) should be promoted to teachers so that they are aware how to access support. The source should be well organised, and contain clear signposting, so that it is easy for teachers to identify materials and tools which are suitable for the teacher's intended purpose (for example, the age group which will be receiving the financial education).

Teachers need to have confidence that materials and tools are of high quality, effective and free from commercial or other bias. Arrangements should be made – possibly through a well publicised accreditation scheme – to enable teachers to identify those materials and tools which are of high quality.

13. Organisations which are considering developing materials or tools should first assess the scope for using, or adapting, materials and tools which have already been developed, either in their own country or overseas

There are many examples which can be drawn on of high quality materials and tools. Those wishing to contribute to financial education initiatives are often motivated to develop new materials. But unless a careful assessment is made of what is already available, there is a risk that they will merely develop what is in effect a different – and perhaps inferior – version of materials or tools which are already available. A proliferation of materials and tools designed to provide essentially the same solutions can be confusing to teachers and others working in the field, rather than helpful to them.

Those organisations which are considering developing new materials or tools should therefore first consult national experts to understand where any gaps in existing provision may lie. In addition, national experts should look to see what has been developed in other countries and whether – subject to securing any necessary permissions – it would be more effective and efficient to adapt or adopt one or more of these, rather than to commission new materials or tools.

Recognising achievement

14. Learning outcomes should be established; and student progress should be measured

Learning outcomes should be established, so that there is clarity about what the financial education programme is seeking to achieve. Students' progress should be measured, both so that the success of different parts of the programme can be assessed and adjustments made if necessary and also to motivate students.

15. Consideration should be given to instituting awards, or other forms of recognition (such as qualifications), both for individual achievement and for high quality financial education schemes

It is often motivating – for students, teachers and educational establishments – to receive awards, or other forms of recognition, to mark high achievements. For students, this can include qualifications or certificates of achievement. For teachers or schools, this can include awards (including those which reflect a comparison with other schools) and certificates, which may be based on self-assessment.

The opportunity to work towards a qualification can encourage students – and their parents and teachers – to opt for financial education courses, since they will be able to receive tangible recognition of achievements.

Universities and colleges

16. Universities and colleges should be encouraged both to offer financial education courses and to provide financial education support for students taking other courses

The provision by universities and colleges of financial education courses can contribute to the development of people with good skills and knowledge. By their nature, however, such courses are likely to appeal most to those who have it in mind to pursue a career connected with financial services.

Universities and colleges should therefore also be encouraged to offer to their students, regardless of the subjects they are studying, planned and coherent financial education programmes, led by student support services, which might include short courses.

Rigorous evaluation

17. Financial education initiatives should be rigorously evaluated in order to build understanding of the most effective ways to deliver financial education in different contexts. There should be a focus on the impact of initiatives on attitudes and behaviours, as well as on improvements in knowledge, understanding and skills

Financial education programmes need to be evaluated so that effective programmes can be built on and replicated elsewhere and unsuccessful programmes can be modified or discontinued and to help provide evidence to convince policy and educational decision-makers of the case for delivering financial education in schools. The way in which a programme is evaluated is likely to depend in part on what is affordable and practicable. For example, it will not always be possible to undertake a longitudinal assessment. One promising way forward is the development of a standard framework, which can be tailored to be either a simple, cheap approach or a more sophisticated exercise, depending on the circumstances[20].

Given that the purpose of financial education is to improve people's understanding and to develop their skills and confidence to manage their money well, evaluations should encompass the impact of programmes on attitudes and behaviours, as well as on knowledge, understanding and skills.

International cooperation

18. International cooperation should be promoted, including the use of the OECD as an international forum to exchange information and research on national experiences and to identify and exchange international best practices and guidelines

In many countries, the provision of financial education for students is in its infancy. There is much which experts in these countries can learn from the experience of those in countries which have made greater progress. Moreover, experts in countries which have made good progress can benefit from learning about developments elsewhere.

The OECD is ideally placed, in the context of its Financial Education Project, to facilitate the exchange of information and experience, including through its recently launched International Gateway for Financial Education, the development of international principles and good practices, publications and conferences.

Notes

1 Similarly, the European Commission's principles for financial education, published in 2007, includes the following: "Principle 3: Consumers should be educated in economic and financial matters as early as possible, beginning at school. National authorities should give consideration to making financial education a compulsory part of the school education curriculum."

2 Information on programmes in universities and colleges is set out in the boxed text on page 72.

3 Pfeg is an educational charity.

4 See Caldwell and Spinks (2007).

5 http://www.jumpstart.org/state_legislation/index.cfm

6 Based on responses to the questionnaire.

7 Based on responses to the questionnaire.

8 Available at http://www.cpf.gov.sg/cpf_info/elearning/voyageoflife/main.asp

9 www.extension.org

10 www.jumpstartclearinghouse.org

11 http://www.pfeg.org/Resources/TeachingResource/default.asp

12 www.understandingmoney.gov.au

13 The OECD International Gateway for Financial Education can be accessed at www.financial-education.org.

14 http://www.understandingmoney.gov.au/documents/essential.pdf

15 http://www.duitsaku.com

16 Based on discussions with experts consulted in the course of the present study.

17 www.financialliteracy.edu.au

18 Details are available at http://www.pfe-awards.co.uk/site/index.php

19 O'Connell (2007) sets out a standard approach (the FEE framework) which can be adapted in this way. See also the report prepared by O'Connell contained in this volume.

20 O'Connell (2007) sets out a standard approach (the FEE framework) which can be adapted in this way. See also the report prepared by O'Connell contained in this volume.

References

Bernheim, B. D., Garrett, D. M. and Maki, D. M. (2001), "Education and Saving: The Long-Term Effects of High School Financial Curriculum Mandates", NBER Working Papers 6085
http://www-econ.stanford.edu/faculty/workp/swp97012.pdf

Boyce, L. & Danes, S. M. (1998), "Evaluation of the NEFE high school financial planning program", Denver CO: National Endowment for Financial Education http://www.nefe.org)

British Columbia Securities Commission press release, dated 1 November 2006, http://www.bcsc.bc.ca/release.aspx?id=4694

Caldwell, B. J. and Spinks, J. M. (2007), Raising the Stakes: From Improvement to Transformation in the Reform of Schools

Capital One (2006), Capital One's Annual Back To School Survey Finds Teens Eager To Learn about Money, But Parents Continue To Overlook Important Learning Opportunities, http://phx.corporate-ir.net/phoenix.zhtml?c=70667&p=irol-newsArticle2&ID=882661&highlight

For the Cooperative Extension personal finance programme, see www.csrees.usda.gov/financialsecurity, www.csrees.usda.gov/fsll, and www.extension.org

Danes, S. (2004), "Evaluation of the NEFE high school financial planning program, 2003-2004"
http://www.nefe.org/hsfppportal/includes/main/home.asp?page=4000#evaluation2

Davis, P., Ralph, S., Farnsworth V., Shi X., Black L. and Kalambouka A., with Farrell P. (2006), "The influence of financial literacy education on students' personal financial management and aspirations"
http://www.ifslearning.ac.uk/financial_capability/14_-_19/cefs/pdf/uom_study.pdf

European Commission Communication on Financial Education (2007) http://ec.europa.eu/internal_market/finservices-retail/docs/capability/communication_en.pdf

Fabrizio, McLaughlin & Associates' evaluation of Visa's Practical Money Skills Program (2005), "Visa High School Student Panel Study On Financial Literacy" http://www.practicalmoneyskills.com/english/resources/about/PMSFL_Longitudinal_Study.pdf

Hilgert, M. A., Hogarth, J. M., & Beverly S.G. (2003), "Household Financial Management: The Connection between Knowledge and Behavior", Federal Reserve Bulletin, 89 (7), 309-322

Jorgensen, M. and Mandell, L. (2007), "The Financial Literacy of Native American Youth" http://www.nfec.info/pdfs/Policy/jumpstartreport07

Jump$tart Coalition for Personal Financial Literacy website is at http://www.jumpstartcoalition.org/

Lyons, A.C., Palmer, L, Jayaratne, K. S. U. and Scherpf, E. (2006), "Are We Making the Grade? A National Overview of Financial Education and Program Evaluation", Journal of Consumer Affairs 40 (2), 208–235

Mandell, L. (1998), "Our Vulnerable Youth: The Financial Literacy of American 12th Graders", Washington, D.C.: Jump$tart Coalition, 1998

Mandell, L. (2005), "The Connection Between Saving and Financial Literacy", Credit Union Magazine, Savingteen Supplement, January 2005

Mandell, L. (2006), "Does Just in Time Instruction Improve Financial Literacy?" Credit Union Magazine, Savingteen Supplement, January 2006

Mandell, L. (2008a), "Teaching Young Dogs Old Tricks: The Effectiveness of Intervention in Pre-High School Grades," in Lucey, Thomas A. and Katherine S. Cooter Financial Literacy for Children and Youth.

Mandell, L. (2008b), "Financial Literacy of High School Students" in Jing J. Xiao (editor) Advances in Consumer Financial Research

Mandell, L. and Klein, L. S. (2007) "Motivation and Financial Literacy," Financial Services Review, Vol. 16, No. 2 (Summer 2007) 105-116

MoneySENSE "Saving – the Sensible Habit" skit for primary school students, summarised at http://www.moneysense.gov.sg/partner_us/savings.html

National Association of State Boards of Education (NASBE) Commission on Financial and Investor Literacy (2006), "Who will own our children?", executive summary available at http://www.nasbe.org/financial_literacy_hp.pdf

National Endowment for Financial Education (NEFE) High School Financial Planning Program is available at http://hsfpp.nefe.org

National Endowment for Financial Education (NEFE) CashCourse resources are available at http://www.cashcourse.org/

National Council on Consumer Education (2007), "Survey of the States: Economic and Personal Finance Education in Our Nation's Schools in 2007" http://www.ncee.net/about/survey2007/NCEESurvey2007.pdf

The New Zealand Retirement Commission's draft syllabus is available at http://www.enzt.co.nz/~fedWeb/index.asp

O'Connell, A. (2007), "Measuring the Effectiveness of Financial Education", paper prepared for the Retirement Commission of New Zealand http://www.retirement.org.nz/files/Measuring_effectiveness_of_financial_education_OConnell_published_April07.pdf

OECD, Improving Financial Literacy: Analysis of issues and policies (2005) http://www.oecd.org/document/2/0,3343,en_2649_33761_35802524_1_1_1_1,00.html

OECD, Recommendation on Principles and Good Practices for Financial Education and Awareness (2005)
http://www.oecd.org/dataoecd/7/17/35108560.pdf

OECD's International Gateway for Financial Education is available at www.financial-education.org

Office for Standards in Education, Children's Services and Skills, Developing financially capable young people (2008)
http://www.ofsted.gov.uk/assets/Internet_Content/Shared_Content/Files/2008/mar/devperfin.pdf

Personal Finance Education Group (pfeg) website is at http://www.pfeg.org/

Russell R., Brooks R. and Nair A. (2006), "Evaluation of the Youth Financial Literacy Trial Program"
http://www.anz.com/Documents/OLI/PeterLalorSecColTrialeval_RMIT.pdf

Sorted Kids and Money is available at http://www.sorted.org.nz/life-stages/kids-and-money

Taylor, L. (2004), "Evaluation of the pfeg Excellence and Access programme"
http://www.pfeg.org/Documents/EandA/Report/EA%20Evaluation%20Report.pdf

Tennyson, S. and Nguyen, C. (2001), "State Curriculum Mandates and Student Knowledge of Personal Finance", Journal of Consumer Affairs 35 (2), 241–262

Varcoe K.P. And Fitch P.R.(2003), "Money Talks – a Program to Improve Financial Literacy of Teens", International Journal of Consumer Studies, Volume 27, Number 3, July 2003 , pp. 225-226

Visa and US National Football League's financial football game is available at http://www.practicalmoneyskills.com/english/at_school/trainingcamp/ff/index.php

Evaluation of the Wells Fargo "Early Intervention Education" programme is available at
http://www.practicalmoneyskills.com/english/resources/about/WF_case_study.pdf

Annex A

Comparison of financial education programmes in schools in selected OECD and non-OECD member countries

	Lead organisation	Part of national strategy	Public-private partnership	Age range	Compulsory or voluntary	Stand-alone subject	Qualification available for school children
Australia	The Australian Government's Financial Literacy Foundation	Yes – part of national strategy led by Financial Literacy Foundation	Yes	5-15	Effectively compulsory	Included in core subjects	Integrated in testing and measurement nationally for years 3, 5, 7 and 9. No separate qualifications.
Canada	N/A	No	Yes	6-18	Compulsory in some provinces	Generally, included in other subjects	None available
France	N/A	No	Yes	16-18	Voluntary	Included in other subjects	None available
Ireland	N/A	Recommendations for national strategy to be published in 2008	Yes	12-18	Compulsory in certain subjects	Included in other subjects	Both compulsory and elective elements are examinable
Malaysia	Bank Negara Malaysia; Ministry of Education	Yes – part of national savings promotion and consumer education campaigns	Yes	7-17	Voluntary	Generally, included in other subjects	None available
Netherlands	N/A	Yes – part of CentiQ	Yes	5-18	Voluntary, but there are some guidelines which primary school-teachers are required to follow	Generally, included in other subjects	None available

New Zealand	Retirement Commission	Under development	Yes	11-18	Voluntary	Generally, included in other subjects	Taken by small proportion of students
Singapore	Monetary Authority of Singapore; Ministry of Education Central Provident Fund Board	Yes – part of MoneySENSE national financial education programme	Yes	7-18	Voluntary	Included in other subjects	No
UK: England	Department for Children, Schools and Families; Financial Services Authority	Yes (for UK as a whole) – part of national strategy for financial capability	Yes	5-18	Voluntary, but Government expects schools to provide financial education	Generally, included in other subjects	Taken by small proportion of students
UK: Scotland	Scottish Centre for Financial Education; Financial Services Authority	Yes (for UK as a whole) – part of national strategy for financial capability	Yes	4-18	Voluntary	Generally, included in other subjects	Taken by small proportion of students
UK: Wales	Department for Children, Education, Lifelong Learning and Skills; Financial Services Authority	Yes (for UK as a whole) – part of national strategy for financial capability	Yes	7-19	Compulsory for those aged 7-16	Generally, included in other subjects	Taken by small proportion of students
UK: Northern Ireland	Council for the Curriculum, Examinations and Assessment; Financial Services Authority	Yes (for UK as a whole) – part of national strategy for financial capability	Yes	4-18	Compulsory for those aged 4-14	Generally, included in other subjects	Taken by small proportion of students
United States	US Treasury	Yes – part of the national strategy for financial literacy	Yes	4-18	Compulsory in some states	Generally, included in other subjects	Taken by small proportion of students

Annex B

Summary of financial education programmes in schools in selected OECD and non-OECD member countries

Australia

The Australian Government established the Financial Literacy Foundation (the Foundation) in June 2005, as a division of the Treasury. The Foundation's mission is to assist all Australians to improve their financial knowledge and to manage their money better. The Foundation provides national leadership and works collaboratively with educational authorities, business and community organisations to build social, spiritual, intellectual and financial capital in education nationally. Among other things, the Foundation is developing partnerships with relevant government, industry and community organisations to deliver quality financial literacy programmes and resources. Further information on the work of the Financial Literacy Foundation is available at www.understandingmoney.gov.au.

In 2005, the Education Ministers from each state and territory, as members of the Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA), commissioned the development of a national Consumer and Financial Literacy Framework (the Framework). As part of the Foundation's work to ensure young people learn more about money, the Framework was developed by a national working party, chaired by New South Wales and supported by the Foundation. The full Framework can be accessed at www.mceetya.edu.au/mceetya/default.asp?id=14429. The National Framework for Consumer and Financial Literacy was endorsed in 2005.

The Framework is designed to ensure that all school students from Kindergarten to Year 10 receive consumer and financial literacy education. The Framework helps to ensure national consistency and coherence among consumer and financial literacy resources for young people, and supports teachers of consumer and financial literacy through professional learning. The Framework calls for a cross-curricula approach to consumer and financial literacy education for the benefit of all school students.

The Framework's dimensions of learning focus on knowledge, understanding, skills, values and attitudes and set benchmarks for consumer and financial literacy. The dimensions of learning are:

- *knowledge and understanding* is about the nature and forms of money, how it is used and the consequences of consumer decisions;

- *competence* is the application of consumer and financial knowledge and skills in a range of changing contexts;
- *enterprise* is the opportunity to use initiative, build financial capabilities and manage risk-taking when making consumer and financial decisions;
- *responsibility* is appropriate consumer and financial decisions that display care for self, others, the community and the environment.

The Framework identifies broad statements of desirable learning achievements for students as they complete year 3, 5, 7 and 9 (which are the benchmarking years for testing and measurement nationally in literacy and numeracy):

Descriptions of Learning: Year 3

Students explain what money is and that money is more than notes and coins. They understand that family income can come from a variety of sources, is often limited and that individuals often have a plan or budget to use their money. They explain the reasons why they want some basic goods and services and recognise that decisions to spend can be influenced by advertising and peer pressure.

Descriptions of Learning: Year 5

Students are aware of a range of forms of money and can discuss their rights and responsibilities in everyday transactions. Students understand that money can also be borrowed through credit and be provided by government payments.

Students know about the different ways money can be kept and the importance of saving. They recognise that family income may be limited and begin to understand that matching household expenditure against income is important when considering family finances. They understand broad issues of quality of life, total family income, expenditure and savings.

They realise that advertising and peer pressure can affect choice and are aware of the social and environmental consequences of their choices.

Descriptions of Learning: Year 7

Students understand the need to plan for the future and have a more detailed understanding of the use of income. They apply critical literacy and numeracy skills to a wide range of commercial advertising and consumer situations, and analyse the potential effects of these on personal finances.

Descriptions of Learning: Year 9

Students are able to distinguish between wealth and income and are aware of the different sources of income and wealth creation. They are able to keep simple personal financial records and establish short and long-term financial goals. They make appropriate choices in relation to the variety of financial services and are also aware of the financial advice available within the community to assist decision making.

Students use basic financial information to assess risk and returns in a local, national and global context. They apply critical literacy and numeracy skills to consider different forms of investments, and the advantages and disadvantages of fund-raising activities or business ventures.

Consumer and Financial Literacy is treated as a core skill and is embedded in curricula and programmes across English, mathematics, science, humanities, business, commerce, economics, technology and enterprise, civics and citizenship and information and communication technology. This is designed to ensure that all Australian students in their compulsory years of schooling will develop knowledge and understanding, skills and values in consumer and financial literacy. Consumer and Financial Literacy is integrated into the benchmark assessments for years 3, 5, 7 and 9.

The MCEETYA Framework identified professional learning as essential for teachers in primary and secondary schools. From June 2008, all teachers in Australia will be able to access professional learning in consumer and financial literacy teaching to build their capacity and to integrate consumer and financial literacy throughout the compulsory years of schooling.

In 2006, the Foundation established a national Reference Group of State and Territory education jurisdictions, Catholic and Independent sectors and Offices of Fair Trading to develop a National Consumer and Financial Literacy Professional Learning Strategy. The strategy, which was released in 2007, was informed by practitioner research undertaken by the Foundation in 2006. To support teachers in the delivery of effective consumer and financial literacy education, the Foundation is currently developing a package of professional learning and support materials to build teacher capacity and confidence in delivering the Framework's dimensions of learning from Kindergarten to Year 10.

The Professional Learning Package will:

- build teacher knowledge, understanding and skills to enable them to effectively deliver consumer and financial literacy education across the curriculum from Kindergarten to Year 10;
- take into account the professional learning needs of teachers in rural, regional and remote locations;
- support teachers in accommodating a range of student learning styles within various learning environments.

The Package, which includes a Facilitators Guide and a Teachers Guide, will be published by early June 2008. The accompanying website www.financialliteracy.edu.au, which will become live in June 2008, will support the Package and the training of teachers nationally.

Teacher training will take place through the Australian Government Quality Teaching Programme (AGQTP). The AGQTP is the Australian Government's flagship initiative for improving the quality of teaching and leadership within national priority areas in Australian schools through:

- providing funding to state and territory government and non-government education authorities for professional learning activities for teachers and school leaders;
- supporting national projects on teaching and teacher quality issues;

- equipping teachers with the skills and knowledge needed for teaching in the 21st century;
- providing national leadership in high priority areas of professional learning need;
- improving the professional standing of school teachers and leaders.

The professional learning encourages and supports teachers to look broadly at the curriculum and identify opportunities across four broad areas of study: *understanding money, consumer education, personal finance* and *money management*. These areas of study are intended to provide teachers with an approach through which they can add value to their teaching and student learning, as opposed to creating new layers of work.

Training will be provided to those currently teaching and will also be integrated into university training programmes for new teachers.

Evaluation of the professional learning project will be done at a state and territory level through the Australian Government Quality Teaching Programme (AGQTP) reporting process and then analysed to give a national picture in 2009/10.

The Foundation's Essential Elements Financial Literacy Assessment (EEFLA) establishes standards that educational materials need to meet to be listed on their website. It also sets out how the Foundation determines whether these standards have been met. Details are at http://www.understandingmoney.gov.au/Content/Education/MaterialDevelopment/default.aspx. The foundation's website lists a range of educational materials which have been assessed as meeting those standards – see http://www.understandingmoney.gov.au/Content/Education/Material/default.aspx. There are three main resources used by all state education departments and sectors:

- In primary schools, MakingCents, an on-line package, has a strong emphasis on literacy and numeracy skills and includes lesson plans, units of work, advice to teachers, games, student worksheets and web-based materials. It includes three programmes, one for each of lower, middle and upper primary school, covering: using money, budgeting and spending, and calculating the cost. The materials were developed to provide detailed support for teachers to teach something they had not traditionally taught. MakingCents also has a successful parent programme, which connects the student, school and community;
- In secondary schools, the Commonwealth Bank Foundation's Financial Literacy Curriculum Resource is an on-line package particularly targeting years 7 to 10. It includes lesson plans, units of work, assessment tools, advice to teachers and web-based materials. It includes 12 modules that have been mapped against each state and territory curriculum;
- The Financial Basics Foundation's Operation Financial Literacy is a 10 module teaching resource aimed at students in Years 9-10 and is supported by detailed teacher notes and student worksheets. The kit contains numerous classroom, internet and research activities, including community surveys. The programme can also be accessed on-line.

One example of how consumer and financial literacy can be integrated across the curriculum to generate engaging and relevant teaching and learning in primary and in secondary schools is the Enterprise Learning Maitland programme, which uses an enterprise education model involving parents, the community and local business. Other similar programmes include Business Week and AUSee.

Canada

Education is the responsibility of the provincial governments. As a result, financial education varies across the ten provinces and three territories. The Financial Consumer Agency of Canada (FCAC) has received a mandate from the federal government to prepare a national tool for use in high schools across the country.

In British Columbia, financial education is mandatory at the Grade 10 level under a life skills programme: the financial education component occupies about 21 hours of class time.

Financial education is mandatory in Nova Scotia at the Grade 11 level under career and life management: personal financial life skills, including budgeting, credit and banking, occupy about 15 hours of class time.

Other provinces have non-mandatory courses that contain some elements of financial education.

Financial management outcomes are included in the mandatory mathematics courses in all provinces, but there is no uniform curriculum. FCAC is undertaking a curriculum review of all provinces to support the marketing of a new financial education programme it is developing.

Financial education is provided to some schoolchildren from the ages of 6-18. Generally, it is integrated into other courses such as business, home economics and civics. Very few schoolchildren student receive comprehensive financial education.

FCAC is developing a programme which will contain modules on needs, wants and priorities; income, expenses and budgets; savings and banking; credit and debt; insurance; and investing and financial planning. The programme will be released in September 2008.

Financial education is delivered by teachers with resources provided by financial institutions, regulators and associations representing financial institutions, such as the Canadian Bankers Association. Young people who are outside the school system also receive financial education through community associations. Social Enterprise Development Innovations (SEDI) is currently piloting a financial capability for youth programme in the province of Ontario. Canadian websites with financial education material include www.cba.ca; www.cfee.ca; www.investored.ca; and www.bcsc.bc.ca.

There is no formal financial education training for teachers across the country. However, in British Columbia, the British Columbia Securities Commission (BCSC) has developed a comprehensive financial life skills programme for teachers to use free of charge. They train teachers to use the programme via a "webinar". FCAC is working with BCSC to adapt this programme to a web-based programme to be available to all teachers in Canada,

regardless of whether financial education is mandatory in their particular province. The new programme is due be available in September 2008.

Junior Achievement Canada brings financial professionals into schools to deliver week-long programmes.

A non-profit organisation, Canadian Foundation for Economic Education (CFEE), is working with the province of Manitoba to create a financial literacy course for high school students.

France

Financial education is provided, on a voluntary basis, to schoolchildren of various ages through a range of subjects, for example through mathematics, history, geography, technology and economics and social sciences. At one time, economics and social sciences was mandatory in the second to last class of high school (15-16 years old): that is no longer the case, but 40% of pupils choose this option, which provides elements on family and income, though little on personal finance.

During compulsory schooling, the aim is to introduce basic concepts. In high schools (lycées) and in specialised options, more sophisticated and complex matters can be covered, for example banks, credit operations and financial instruments. There are no qualifications or awards available on financial education.

There are no standards or content specifications. Provided that national education programmes are respected, schools have flexibility to focus on specific teaching initiatives. There is little information centrally available on methods used by teachers when delivering financial education.

There are currently no specific training programmes for teachers on financial education.

Teachers generally produce their own financial education teaching tools and materials when they choose to cover the topic within the framework of their subject. Relatively few materials or tools have been developed by financial services firms or associations. The Institut pour l'Education Financière du Public has identified, as one of its priorities, the development of a dedicated teachers/trainers section of its website (www.lafinancepourtous.com) to facilitate the sharing of tools and materials which teachers or other trainers have produced. A connected priority is the development of additional teaching modules and tools, which will be available to teachers free of charge.

No specific funds are allocated within the national education budget to financial education in schools. Funds might be granted by local or regional entities, for example within the framework of initiatives in the field of consumer education. However, it is thought that any such funding is extremely limited.

Ireland

The Financial Regulator set up and chairs a National Steering Group on Financial Education, which brings together a range of stakeholders from Government, public bodies, voluntary institutions and the private sector who

have an interest in improving financial education. The Steering Group is due to report in 2008 with recommendations for a financial education strategy in Ireland. The Steering Group envisages that its recommendations will seek to foster a comprehensive approach to rolling out financial education resources and initiatives across various channels and providers, including in schools. The Steering Group is not intended as an implementing body and will focus on encouraging the relevant competent bodies to implement the report's recommendations.

Financial education has been made available to students for several decades through the formal education system at second level. Students enter second level at 12-13 years of age, with the junior cycle lasting for three years and the senior cycle lasting for two or three years, typically being completed at age 18.

Financial education programmes do not exist as complete or comprehensive courses. However, the formal nationwide education system provides for elective courses at junior cycle and senior cycle. The courses in question cover wider business related curricula that contain elements of personal finance. These elements are more comprehensive during the junior cycle than during the senior cycle at second level. In addition, at second level, there is a senior cycle syllabus, the Leaving Certificate Applied, which is aimed at preparing students for adult and working life. Part of the second year of this cycle addresses personal finance issues and is compulsory and examinable.

There is currently no formal guidance on the provision of financial education in education establishments.

The Financial Regulator is piloting two school programmes relating to budgeting and account options. The first programme is a transition year (an optional 4th year of second level schooling during the senior cycle) personal development programme that encourages students to record their own ideas about the role that money plays in their lives. The intention is that, by personalising their recollections of the learning plan in their own, private, filofax-style school document, they will embed financial skills within their own personal skills set. The second programme is a syllabus-based approach that targets Leaving Certificate Applied students in classes that prepare students for adult and working life. Each student is provided with their own series of worksheets and a personal folder in which to 'file' the results of their research on account options, thereby providing them with reference materials for future use.

Financial education course materials costs are largely borne by families. Those school programmes that are being piloted by the Financial Regulator are funded by the Financial Regulator and are made available free of charge to schools and students. In addition, a range of industry bodies and individual financial service providers have developed materials which they make available to schools. The National Steering Group on Financial Education has recently completed an audit of financial education resources available in Ireland which will be included in the Group's report, due to be published in 2008.

Malaysia

Financial education is provided to school children (from7-17 years old), largely through co-curriculum activities.

The savings campaign, which was launched in 1996, provided the foundations for the promotion of financial education for schoolchildren. The long-term objective of the campaign is to nurture Malaysians to be financially savvy. The campaign is a collaborative initiative by Bank Negara Malaysia (the central bank), the Ministry of Education (MOE) and financial institutions (FIs) to inculcate the savings habit and create awareness among schoolchildren of the importance of smart financial management and planning.

The campaign has resulted in the following initiatives which have been successfully implemented:

- School Adoption Programme (SAP) – under the programme, introduced in 1997, each school is adopted by an FI (a commercial bank, development bank or insurance company). The FIs conduct activities related to banking, insurance and basic financial knowledge and provide an opportunity for schoolchildren to experience having a bank account. So far, more than 7,000 schools have been adopted by the FIs;

- Student Financial Club (SFC) – an SFC has been established in more than 2000 schools under the SAP since 1999, as part of their co-curriculum activities. Students who join the club engage in money- and finance-related activities, through workshops, visits to financial institutions, knowledge-sharing sessions and games;

- Pocket Money Book – Pocket Money Book was introduced in 1998 to educate and assist students to manage their pocket money and to take control of their personal finance. The book contains money- and finance-related articles, exercises and games. So far, around six million books have been distributed;

- Financial education website – Bank Negara Malaysia, in collaboration with the MOE, created a financial education website, duitsaku.com, as an interactive financial education tool to enhance financial literacy among students. Students can participate in contests, games, quizzes, financial calculations and other activities related to personal financial management. The website was launched in October 2004, and has so far attracted a membership of more than 85,000.

In order to encourage more financial education activities, the following additional initiatives have been taken by Bank Negara Malaysia, the MOE and FIs:

- FIs provide support and assistance to help adopted schools organise more financial education activities;

- Bank Negara Malaysia provides training materials for teachers in charge of SFC;

- Bank Negara Malaysia collaborates with state education departments (SED) to award active schools, teachers and students in SFC in every state;

- Bank Negara Malaysia provides prizes to schools that register the most number of students as duitsaku.com members;
- FIs organise competitions at their adopted schools and provide prizes for students who diligently plan their finances using the Pocket Money Book.

From 2007, students aged 17 who participate in the compulsory National Service Programme are taught various aspects of financial management, such as budgeting, managing spending by making smart financial choices and banking information. It is expected that 120,000 students per year will participate in the National Service Programme.

Financial education is provided to schoolchildren largely through SAP and SFC, which are outside the mandatory school syllabus. Within the curriculum, some elements of financial education are embedded in classroom subjects such as mathematics, living skills, moral education and basic economics. There are no financial education examinations.

Teachers in charge of SFC are provided with standard module content. However, they may vary the activities according to students' capabilities. The modules cover the following topics:

Modules for primary school students (7 – 12 years old):

- understanding of money;
- simple budgeting;
- simple decision-making;
- saving for future needs.

Modules for secondary school students (13 – 17 years old):

- setting financial goals;
- budgeting;
- financial management (including consequences of personal financial decisions), saving and investment (use of financial tools, risk and return of investment);
- credit;
- insurance.

In addition to FIs' involvement through SAP, public bodies and private companies, as part of their corporate social responsibility activities, have organised activities and seminars and have developed reading materials and websites; and consumer associations have produced books and contributed articles in magazines and newspapers.

Bank Negara Malaysia, in collaboration with the MOE and FIs, have organised workshops to train teachers in charge of SFC. The training is part of the teachers' continuing professional development. The selection of teachers to handle the SFC is at the discretion of head teachers. The MOE and FIs have observed that teachers who had attended the workshops were motivated and more excited in

conducting financial education activities. Hence, their clubs tended to be more active and membership had increased.

In 2005, a guidebook for teachers in charge of SFC, prepared by Bank Negara Malaysia in collaboration with the MOE, was distributed to all schools. Lesson plans for teachers, which were compiled in consultation with MOE and SEDs and which contain outline modules and activities on financial education that can be conducted during SFC meetings, are being distributed to all schools in 2008. In addition, effective financial education materials, such as comic books and CD Roms, will be developed and distributed to schools during 2008.

In order to promote financial education to more students, Bank Negara Malaysia plans to extend the SAP to private schools in Malaysia.

SEDs organise co-curriculum award programme annually for outstanding schools, teachers and students from each category of club or society. As from 2008, SFC will be included in this programme.

Bank Negara Malaysia allocates an annual budget to organise workshops on financial education for students and teachers as well for the printing of financial education materials. In addition, FIs allocate funds to organise activities related to financial education in their adopted schools and to produce financial education materials.

The School Adoption Programme is part of the Consumer Education Programme for Malaysians, as outlined in the Financial Sector Master Plan (a ten-year blueprint which charts the future direction for the Malaysian financial system) launched in 2001.In order to help secure enhanced financial capability of consumers, Bank Negara Malaysia has established a Financial Education Working Committee and has formed strategic alliances with the Credit Counselling and Debt Management Agency, Financial Mediation Bureau and Malaysia Deposit Insurance Corporation. The objective of this strategic alliance is to foster greater collaboration in implementing the consumer education initiatives among committee members, through concerted efforts to maximise outreach to a wider range of consumers. The alliance also promotes the better understanding of financial education initiatives and measures undertaken by other committee members and so helps to avoid duplication of effort.

Netherlands

As part of a broad programme for improving the financial education of consumers (CentiQ), which was launched in November 2006, there is a project under way to improve the financial education of schoolchildren and students. This covers those aged between 8-18 years old, but the focus will be mostly on those aged 12-18.

Primary schools are required to provide financial education. They are thought to have been providing financial education since the 1970s. The Ministry of Education has provided primary schools with a description of the skills which schoolchildren need to have:

- 5-6 years: children have to learn what saving, borrowing and buying is and the agreements involved;

- 7-8 years: children have to learn the value and importance of money (and other ways of paying);
- 9-10 years: children have to learn how to deal with pocket money and the function of saving;
- 11-12 years: children have to learn to use different ways of paying and learn how to choose the right savings and payments methods.

Primary schools have discretion to decide how much time to spend on financial education. They also decide on the materials to use. However, they are required to operate within the guidelines set out above.

No specific guidelines have been issued to secondary schools.

In primary schools, financial education tends to be provided as part of arithmetic and of knowledge of society. In secondary schools, it tends to be provided as part of economics and of social science.

A survey of 400 teachers from different types of school found that teachers, both in primary schools and in secondary schools, think financial education is important (especially, in the case of secondary school teachers, for students likely to join one of the practical professions).

Lessons are generally delivered by teachers, but are sometimes delivered by financial specialists. Teachers do not receive specific training in the provision of financial education (though their broader training helps equip them to use materials and produce materials effectively). Those who are not teachers are trained by, for example, consumer organisations.

There are no examinations, qualifications or other awards associated with financial education.

Materials (mostly on budgeting) are provided by local and regional governments, consumer organisations, banks and insurance companies. Schools generally use material from a small number of organisations which are regarded as producing high quality materials. They sometimes complement these with materials or games from other organisations or with materials which they have produced themselves.

The Ministry of Finance provides most of the funding for CentiQ, with a small part of the funding provided by banks and insurance companies. The Ministry of Social Affairs and other organisations provide funding for Nibud, an organisation which is considered to be successful in providing materials for schools on budgeting and dealing with money (www.nibud.nl).

As part of CentiQ, it is intended to evaluate each part of the financial education programme, including financial education in schools. A study (which will be repeated in a few years time) is currently under way to assess the financial knowledge and beliefs of students between the ages of 8-18.

New Zealand

The Retirement Commission leads work on financial education, as part of its leadership of the development of a national strategy for financial literacy.

Financial education has only recently gained acceptance as a necessary component of education for all, following its promotion by the Retirement Commission to the Ministry of Education and other government ministries and agencies. However, there is no guidance which encourages schools to provide financial education.

The Retirement Commission estimates that, currently, around 2% of schoolchildren aged 11-12, 5% of those aged 13-15 and 8% of those aged 16-18 receive financial education. The two younger age groups tend to receive around 25 hours per year, while the older age group – where there is scope for schools to arrange examinations – receive around 100 hours.

The Retirement Commission has developed a curriculum for financial education in schools. Funding has been found to undertake a trial of this curriculum (in 2008) and to provide professional development for the teachers involved in the trial. The Ministry of Education has agreed to work jointly with the Retirement Commission on the trial and on the development of the curriculum and to take over responsibility for it from July 2009. The trial will be independently evaluated. The overall school curriculum has been reviewed and a revised curriculum is to take effect from 2010: the financial education curriculum will be phased in as part of this.

The NZ Qualifications Authority (NZQA) is developing unit standards on financial education that can be included in qualifications. These use the Retirement Commission's financial education curriculum as a base. The Retirement Commission is represented on the development committee, helping to ensure continuity in the programmes being developed. The standards will be available for schools and tertiary providers to use. The Retirement Commission is working with the tertiary sector to have the financial education unit standards included in introductory level qualifications: there has been a positive response to date from tertiary providers.

Some financial education support to schools and students is provided by Enterprise New Zealand Trust.

Teachers working with Enterprise NZ Trust get some training from the Trust. Since financial education is not a compulsory part of the curriculum, other teachers receive no training in this, either pre-service or in-service.

A small proportion of senior school students take an examination organised by Enterprise NZ Trust.

In those schools which provide financial education, it is normally delivered by teachers. It sometimes also delivered by budget advisers from community groups and NGOs.

The work undertaken by the Retirement Commission is funded by the government, although the trial of the school curriculum is being supported by a private sector partnership.

Enterprise NZ Trust is a not-for-profit trust and obtains funding from a variety of sources, both private and state. Its mission is to ensure that increasing numbers of New Zealand school students participate in quality enterprise and financial literacy education.

Singapore

Financial education is delivered to students at all levels.

At the primary and secondary school levels, financial literacy is integrated into relevant subjects, such as social studies and civics and moral education.

The MoneySENSE national financial education programme supplements this by supporting and co-funding financial literacy enrichment activities in schools and engaging industry practitioners to conduct educational talks. To date, MoneySENSE programmes have been conducted for over 100,000 students. These include:

- the Association of Banks in Singapore and MoneySENSE have developed a 30-minute programme which includes an interactive skit *Saving – the Sensible Habit* (about a bear named TRIFF and his friends), performed by a local theatre group, as well as a quiz. The programme is designed to reach out to primary school students during school assembly periods. It teaches students the difference between "needs" and "wants", and about the virtues of living within your means and saving for a rainy day. Teachers are encouraged to run through a cartoon guide with their students after the programme to reinforce the key learning points. The programme has been provided to children in 68 primary schools;
- financial education board games and workshops conducted for over 15,000 secondary school students and 700 junior college students;
- the MoneySENSE Ambassadors promotion that encouraged over 8,000 secondary students to draw up their pocket money budgets;
- the MoneySENSE-Singapore Exchange stock whiz challenge, which is an online game to impart the basics of personal investing, for 600 students from Integrated Programme schools.

The Ministry of Education (MOE) has developed resources for teachers to enable them to include financial literacy concepts in relevant subjects at the primary and secondary school levels. For example, in a primary school civics and moral education lesson on the theme of bonding with family, students reflect on how a girl's request for a new pair of expensive roller blades could affect the family's expenses, and learn the importance of considering the needs of other family members when making decisions for purchases of non-essential goods and the consequences of spending money unwisely. MOE provides teachers with lesson plans as well as a CD-Rom entitled "Promoting Financial Literacy in Schools" which comprises definitions, illustrations, case studies, templates and statistical facts. Sessions are also organised for teachers to share their best practices to deliver financial literacy lessons effectively. In addition, MOE works with MoneySENSE and the CPF Board and collaborates with other external organisations such as the National Institution of Education and Singapore Management University to develop financial literacy seminars and workshops for teachers.

United Kingdom

The UK's financial services regulator, the Financial Services Authority (the FSA) , leads a National Strategy for Financial Capability, which it initiated in 2003, in partnership with the Government, financial services industry, educational bodies, consumer and voluntary organisations and others. One of the seven main programmes within the National Strategy is the delivery of financial education in schools (known as the Learning Money Matters programme). Another is improving the financial capability of young adults, including those in further education or in higher education (universities).

These programmes cover the whole of the UK, but education is organised separately in England, Scotland, Wales and Northern Ireland, so each is covered separately below. The FSA coordinates work on personal financial education across all four countries to ensure synergy and consistency.

The UK government's aspiration is that all schoolchildren benefit from a planned and coherent programme of personal financial education, so that they leave school with the skills and confidence to manage their money well. The school project within the National Strategy is intended to translate that aspiration into real change in the classroom. The FSA is taking this forward through working with government to raise the profile and status of personal finance education; and by building the capacity of key delivery partners – pfeg (the Personal Finance Education Group), the Scottish Centre for Financial Education, the Council for the Curriculum, Examinations and Assessment (Northern Ireland) and the Welsh Unit for Financial Education – in order to provide comprehensive support to teachers so that they feel confident and competent to deliver personal finance education to their pupils.

A benchmark study conducted by the Financial Services Authority (FSA), published in June 2006, indicated that most schools taught personal finance in the form of occasional lessons, usually taking place once or twice a term or less. While 57% of secondary schools (for students aged 11-16) reported that they provided regular personal finance education, it was most often only taught once or twice a month. In UK primary schools (for schoolchildren aged 7-11), the proportion of children who received some personal finance education increased as they got older - up to 68% by age 10-11 years. The same trend was found within secondary schools, with the percentage receiving personal finance education rising from 11% at age 11-12 years to 75% at age 15-16 years.

The FSA benchmark survey found that the most common topics covered in primary schools were the importance of looking after money (88% of schools) and the purposes for which money can be used (86%). Within secondary and independent schools, the most common topic was budgeting and managing personal money (93% and 92% respectively). A high proportion of secondary schools also taught about credit (83%), rights and responsibilities (81%) and earnings and benefits specific to school leavers (80%).

The benchmark study will be repeated in the future to measure progress.

A number of financial services firms provide resources and support, typically as part of their corporate social responsibility programmes. These firms are a valuable source of funding and some provide innovate resources that teachers can use in the classroom. Many of the resources have been awarded the pfeg quality mark: this quality mark is supported by stakeholders, including the government and the FSA.

England

Financial education is not compulsory. But the Department for Children, Schools and Families (DCSF) expects all schools to provide financial education for all students from ages 5-16.

Personal, social and health education (PSHE) provides the primary opportunity *within the curriculum* for pupils to be taught about personal finance. Guidance, published in 2000, provides information for teachers about what financial capability hopes to achieve and how teachers can effectively deliver financial education to their students[1].

Following a review by the Qualifications and Curriculum Authority (QCA) of the secondary school curriculum, financial capability has been given a more secure place in the new curriculum through a new economic wellbeing and financial capability strand at Key Stages 3 and 4[2] (which correspond to ages 11-14 and 14-16), which forms part of revised personal, social, health and Economic education (PSHE education). The subject will remain non-statutory.

Opportunities for the teaching and learning of financial capability occur across the curriculum – for example, within PSHE, mathematics, careers education, work-related learning, enterprise education, business studies and citizenship. Financial education will be a context for functional mathematics, which is being introduced into GCSE mathematics (examinations taken by students typically aged 16) from September 2010.

PSHE provides for personal finance education to be taught throughout Key Stages 1 to 4. Guidance[3] issued by the Government to teachers specifies that pupils should be taught:

- at Key Stage 1 (5-7 years old) that money comes from different sources and can be used for different purposes;
- at Key Stage 2 (7-11 years old) to look after their money and realise that future wants and needs may be met through saving;
- at Key Stage 3 (11-14 years old) what influences how we spend or save money, and how to become competent at managing personal money;
- at Key Stage 4 (14-16 years old) to use a range of financial tools and services, including budgeting and saving, in managing personal money.

The DCSF has commissioned pfeg (Personal Finance Education Group) to revise this guidance: the new version will be available by mid-2008.

The IFS School of Finance (www.ifslearning.ac.uk) and the Award Scheme Development and Accreditation Network (ASDAN) (www.asdan.org.uk) both offer personal finance qualifications, mainly aimed at 14-19 year old students, which are taken by a small proportion of students.

Financial education is mainly delivered by teachers, though some financial services staff or other experts also deliver lessons, often in conjunction with the teacher.

As part of the Learning Money Matters programme, the FSA is funding pfeg to provide a consultancy service to teachers in secondary schools. Pfeg provides tailored support to ensure teachers are competent and confident in their delivery of financial education. The aim is to have supported 4,000 of the 6,000

secondary schools in England by 2010/11. A similar programme, What Money Means, is run by pfeg for teachers in primary schools. Funded by HSBC Bank, this programme seeks to place into schools 10,000 of HSBC's own employees, who volunteer to support teachers in schools.

Early findings from an independent evaluation of the Learning Money Matters secondary school initiative being undertaken by pfeg suggest that the profile of schools which have requested support is representative of secondary schools across England. 99% of teachers who responded said that they had been very or quite satisfied with the support give by pfeg consultants, in particular in terms of access to resources and tailored help in putting together a personal finance education programme. The most commonly cited barriers to developing these programmes were the amount of curriculum time available and teacher confidence.

The pfeg website (www.pfeg.org) is designed as a 'one stop shop' for teachers to enable them to locate resources to assist them in teaching financial capability. The website collates materials produced by various sources, including those provided by financial services industry firms, educational and voluntary organisations.

Pfeg assesses financial education materials and resources and awards those which meet defined standards a quality mark. Resources that meet this standard are accurate and up to date, meet curriculum requirements, are easily available, cover a range of financial topics, and have been developed in partnership with teachers and have been shown to be successful in schools.

The PSHE Continuing Professional Development (CPD) programme is to be expanded to include a module on financial capability. It will not be compulsory for PSHE teachers to receive this training.

The Department for Children, Schools and Families will be providing £11.5m over the three year period 2008/09-2010/11 (£4.5m/£3.5m/£3.5m) to support financial education in schools. This funding seeks to develop a coherent approach to financial education, raising its profile among teachers and local authorities, and developing innovate resources that will supplement existing provision. The support programme will include:

- revising curriculum guidance for financial capability, originally published in 2000, to reflect changes to the secondary curriculum and bringing it up to date;
- producing a range of innovative curriculum resources which will use the Child Trust Fund as a tool to help children learn more about the value of money and savings;
- ensuring teachers receive high quality training and support so that they have the skills and confidence to teach financial education well;
- expanding the National PSHE CPD programme to include economic wellbeing and financial capability.

Scotland

A policy document entitled 'Financial Education in Scottish Schools: A Statement of Position', published in 1999, advocated the development of

financial capability as part of every child's education from early years to 18. Financial education is not currently compulsory and there are wide differences in both the quality and quantity of financial education which is delivered in schools.

The policy paper outlined a definition of financial capability based on understanding, competence, responsibility and enterprise and underpinned by 18 learning outcomes.

The 3-18 curriculum review that is currently taking place in Scotland will give a greater status and profile to financial education. The draft numeracy outcomes contain a strand on money: one of the learning outcomes states that, at age 14, young people will be able to 'source, compare and contrast different financial products, services and contracts and explain which offers best value'. In addition to this, in the social subjects area one of the learning outcomes is that young people will be able to "identify essential goods and services, discuss the different ways available to pay for them, considering the benefits and risks of each method". There is currently an expectation that the schools inspectorate will evaluate schools on the basis of these learning outcomes.

Financial education programmes are organised at local level, often with support from regional and national organisations such as Learning and Teaching Scotland (LTS). (LTS is the lead organisation for curriculum development in Scotland and offers support and guidance to teachers, early years practitioners, schools and education authorities.)

Financial education takes place mainly through mathematics, personal and social education, business education and home economics; and there are also a number of examples where powerful messages have been delivered through literacy and drama.

Only a small proportion of students take examinations or obtain qualifications. Generally, these are students who are looking to make a career in the financial services sector.

Schools and teachers are responsible for delivering financial education, but teachers are encouraged to make use of 'education industry link' providers to enhance the learning experience.

The Scottish Centre for Financial Education (SCFE) offers a wide range of continuing professional development (CPD) opportunities for teachers. These range from school visits through to one day seminars and conferences. The SCFE is funded by the Scottish Government, the FSA and some financial services firms and foundations. The FSA provides funding as part of its Learning Money Matters programme.

The SCFE works in partnership with a wide range of organisations to provide resources for learning and teaching across the early years to 18 age range. These are distributed to schools through local authorities, with which the SCFE has worked in partnership to organise and deliver CPD. Resources are also distributed at events such as seminars and conferences. The SCFE does not send resources to schools unless teachers have been involved in their events.

All SCFE resources have received the pfeg quality mark.

The SCFE is developing a self-evaluation tool for schools to use. In addition, it is intending to update its advice on financial education in the context of the new 'curriculum for excellence'.

The Scottish Government is undertaking a review, which is due to report in Autumn 2008, of personal finance education provision in Scotland.

Wales

Financial education has been compulsory since 2000 for schoolchildren aged 7-16. It is an entitlement for those aged 16-19. Enhanced requirements are being introduced from September 2008 for those aged 7-19. Schools have discretion on how many hours of financial education which they provide.

The Department of Children, Education and Lifelong Learning and Skills (DCELLS) within the Welsh Assembly has lead responsibility for financial education in schools. The Financial Inclusion Unit of the Department for Social Justice and Local Government has overall responsibility for leading and coordinating financial capability and financial inclusion issues across the Welsh Assembly Government.

Detailed learning outcomes for financial education in schools have been laid down by the Welsh Assembly Government.

Financial education is generally provided as part of mathematics or personal and social education.

Teachers deliver financial education, with some help from credit unions, other financial institutions and citizens advice bureaux.

There is no specific training available for teachers at present.

The Welsh Assembly Government is establishing a Welsh Financial Educational Unit as from April 2008. Its responsibilities will include the following:

- evaluating the state of financial education in Welsh schools (and in the wider community);
- assisting teachers and others who work directly with young people, schools, colleges or education authorities to provide a high standard of personal finance education suited to the needs of all learners;
- cataloguing and evaluating existing resources and developing new resources to meet needs;
- developing and securing the delivery of training resources to professionals working directly with young people;
- working with other stakeholders in financial education;
- securing sponsorship from private sector organisations.

Northern Ireland

Following a revision to the curriculum, which took effect from September 2007, financial education is compulsory at foundation level and at Key Stages 1, 2 and 3 (that is from ages 4-14). Its title within the curriculum is 'Mathematics with Financial Capability'. Financial education focuses on developing pupils'

knowledge and understanding of financial issues, developing their skills base and competence when dealing with financial issues and developing their level of financial responsibility for the financial decisions they make.

The revised curriculum also includes cross-curriculum themes, which all subjects must contribute to when delivering their lessons. The most significant of these for financial education is 'Economic Awareness'. Another, 'Learning for Life and Work', also contributes to the delivery of financial education.

At Key Stage 4, all pupils continue to be taught Learning for Life and Work, which allows them to continue their financial education. A number of GCSE subjects – particularly, financial services and economics – include sections which directly focus on issues around personal finance.

At Key Stage 3, students are required to be assessed on their use of mathematics across the curriculum: this requirement stipulates areas of financial knowledge and understanding. At Key Stage 4, optional GCSE units such as economics and financial services are accredited and pupils receive a qualification if successful.

Almost all lessons focused on financial education are interactive and experiential. Many schools have introduced a school bank or allowed a local back to provide the service, though some have not done so because they are concerned about issues such as bias towards one bank and the level of work required to facilitate such a service.

Almost all resources are electronic and interactive: most are CD ROM based or are available on the internet for all teachers and pupils to access. They are typically modern, bright and engaging.

Two teachers have been employed by the Council for Curriculum, Examinations and Assessment (CCEA) to provide support and training on financial education to teachers. There is a three year plan in place which builds schools capacity year-on-year. An information booklet is planned for distribution to all schools by December 2008. This will include curriculum links, case studies, ideas of how to access resources and useful website addresses. A micro-site will also be established so that teachers can access all the materials electronically. The training of teachers will take a number of forms, including training individual schools, cluster groups and conferences. There is a promotional and awareness campaign running alongside this.

CCEA is devising a baseline questionnaire which will be sent out to schools to establish the knowledge and skills the teachers have in this area and to ascertain what they need to build their schools' capacity to deliver financial education.. This will be repeated periodically to establish future needs and the effectiveness of the project.

The FSA, as part of its Learning Money Matters programme, funds the two teacher posts in CCEA referred to above. The Department of Education (DENI) provides funding for resource development.

A number of banks and the consumer council have each developed, or are developing, resources for use in schools.

United States

According to a survey by the National Council on Economic Education (NCEE) (2007), personal finance was included, at least to some extent, in the educational standards of 40 states (up from 34 states in 2004 and 21 states in 1998), with 28 of these requiring standards to be implemented; though only nine states required the testing of student knowledge in personal finance and only seven states made personal finance a requirement for high school graduation. The Jump$tart State Requirements website[4] indicates that, in 2008, three states require at least a one-semester course devoted to personal finance, 15 states require personal finance instruction to be incorporated into other subjects, with other states having no requirements, although personal finance education is provided in most other states on a discretionary basis. Detailed requirements differ from state to state and can also differ from school district to school district. At the Federal level, the House of Representatives has passed Resolution 737 designating April as financial literacy month and a number of states, in addition to the seven, have recognised April as financial literacy month or have other types of financial education bills pending.

Personal finance is most commonly taught – and virtually all existing requirements apply – at high school level (grades 9 – 12, or approximately ages 14 – 18).

In a Jump$tart survey conducted in 2006, 16.7% of the respondents had taken a full-semester course in personal finance and 29.3% had taken another course where at least one week of study was devoted to personal finance. Respondents were 12th grade students (aged 17-18).

Financial education is sometimes provided as a stand-alone subject and is otherwise integrated into other subjects, such as mathematics, science, social studies, economics, history, family and consumer science and English.

The content of financial education is decided by the teacher. However, the Jump$tart Coalition for Personal Financial Literacy has created national standards for financial education curricula (from kindergarten through to 12th grade) that have been adopted by the majority of financial education providers as a framework for an ideal personal finance curriculum. These standards include learning benchmarks for 4th, 8th and 12th grades (ages 9-10, 13-14 and 17-18, respectively.)

The standards do not reflect a set curriculum. Instead, they are a framework to help curriculum developers create new products; to help teachers develop lesson plans; and to help administrators set requirements. They are designed to allow flexibility in how individual teachers or schools achieve the standards and they value the use of a variety of educational materials or products.

The Jump$tart Coalition for Personal Financial Literacy seeks to help educators and parents, including parents of home-schooled children, locate personal financial education materials. To accomplish this, Jump$tart has established an on-line database of personal finance resources available from a variety of education providers, such as government, business, universities, educational bodies and non-profit organisations. Many of the materials are low cost or free. Teachers can use these personal finance teaching materials to follow their state's standards in economics, business, mathematics and family and consumer science. To ensure that disseminated materials adhere to high standards, the coalition uses a review checklist as a guide in the selection of

materials to be included in the database. Jump$tart's clearing house www.jumpstartclearinghouse.org lists around 700 resources, including printed materials, on-line resources, CDs, DVDs and games.

In those states where personal finance education is required, classroom teachers are responsible for delivering it. However, many other individuals from many sectors also help to educate students about money and business. For example, credit unions have a large, nationwide contingent of professionals who make classroom visits to talk about financial services. Junior Achievement, a non-profit organisation, provides trained volunteers, who mainly come from the business sector, to offer "real-world" perspectives on financially literate behaviour. These are provided in the course of frequent, coordinated classroom visits. This programme has reached around 4 million students. Some schools districts, for example in Washington DC, operate speaker bureaux to help bring guest presenters into the classroom.

There are several banks and credit unions that are run by students at their own schools.

Many organisations that deliver programmes for use in the classroom also have corresponding training. Examples include the National Foundation for Teaching Entrepreneurship's "NFTE University".

Most of Jump$tart's state coalitions offer teacher workshops to teachers in their states in the form of one-day workshops that offer practical suggestions and introduce teachers to a variety of resources.

In the state of Wisconsin, the National Institute of Financial & Economic Literacy, in partnership with the Wisconsin JumpStart Coalition, offers a series of week-long teacher-training courses during the summer on a college campus The aim is to provide teachers with content, materials, and skills to teach and promote financial literacy in their classrooms and communities. The curriculum is delivered by a mix of business and academic professionals.

Finance University, a personal finance training programme begun in West Virginia in 2001, helps teachers gain competency in financial literacy topics by offering free courses to state educators and up to three hours of graduate, undergraduate or professional development credit. The training programme was initiated by the JumpStart Coalition.

Among the resources available to teacher are two Practical Money Skills for Life (Visa USA) courses, each of which comprises self-guided on-line training followed by written coursework which the teacher sends to an assessor.

The federal government recognises best practices and provides grants. For example, the Department of the Treasury's Office of Financial Education evaluates financial education programmes to determine whether they qualify for a John Sherman Award for Excellence in Financial Education. The analysis is based on the Eight Elements of a Successful Financial Education Program, which are criteria established by the Office of Financial Education. The Department of Education's Excellence in Economic Education programme awarded a five year grant to NCEE in 2005/06 to help improve the quality of student understanding of personal finance and economics.

In 2007, the US Treasury's Office of Financial Education worked with four economists to develop a new assessment tool for high school students older than 13 years of age. For 2008, Treasury plans to use the tool to roll out a student

recognition programme called the Financial Literacy Challenge. Designed to widen the base of support for financial education in US high schools, the voluntary Challenge will be used to determine and reward high levels of financial literacy. The Challenge is based on national personal finance education standards. The 35 question, on-line test will be offered from late April to mid-May. Teachers will be invited to select any day within the testing window to participate. Students with scores in the top 25th percentile of national scores will be recognised by Treasury.

Direct funding for financial education comes mainly from the private sector, including financial institutions, foundations and academic institutions. There are also a few government grants.

In 2002, the Department of the Treasury issued a white paper "Integrating Financial Education into School Curricula", as a result of a panel discussion hosted by the US Department of the Treasury and the US Department of Education and which involved key national youth education groups. The discussion focused on the benefits of incorporating financial education into mathematics and reading curricula within a standards-based educational system. The report identified five access points for bringing financial education into schools: state standards for education, testing, textbooks, financial education materials and teacher training. The white paper also includes a list of internet clearing houses and other organisations that compile lists of financial resources that target school-age audiences.

The Department of the Treasury, along with the Department of Agriculture Cooperative State Research, Education, and Extension Service, will convene a symposium of researchers who specialise in financial education in late 2008. The goal of the symposium is to raise awareness of existing academic research and to define questions that require additional analysis. The symposium will result in a white paper that will survey current financial education research and will identify areas of potential future research.

Notes

1 Guidance for both primary schools and secondary schools can be found at http://www.dfes.gov.uk/publications/guidanceonthelaw/fcg/. (The secondary school guidance (Key Stages 3-4) is currently being updated.)

2 The relevant programmes of study, which come into effect from September 2008, can be found at http://www.qca.org.uk/libraryAssets/media/PSHE_Economic_Wellbeing_KS3_PoS.pdf and http://www.qca.org.uk/libraryAssets/media/PSHE_Economic_Wellbeing_KS4_PoS.pdf.

3 Further details of the guidance on what children should be taught at each key stage can be found at http://www.dfes.gov.uk/publications/guidanceonthelaw/fcg/

4 http://www.jumpstart.org/state_legislation/index.cfm

References

National Council on Consumer Education (2005), "Survey of the States: Economic and Personal Finance Education in Our Nation's Schools in 2004" http://www.ncee.net/about/survey2004/NCEESurvey2004web.pdf

"Personal finance education in schools: A UK benchmark study prepared for the Financial Services Authority" (2006), http://www.fsa.gov.uk/pubs/consumer-research/crpr50.pdf

US Department of the Treasury (2005), "Integrating Financial Education into School Curricula", available at www.treasury.gov/financialeducation.

Part II – Financial Education Issues

Pension Information: The Annual Statement at a Glance

Lena Larsson

Annika Sundén

Ole Settergren

Swedish Social Insurance Agency
and OECD Consultants

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What is pension information?

The world's allegedly shortest mail correspondence took place in 1862.[1] The French author Victor Hugo had gone on vacation as his big novel *Les miserable* was published. But Hugo could not refrain himself from writing to the publisher to ask how it went. The letter read: « ? » and the publishers' reply « ! ».

Pension information around the world falls short in comparison with Hugo's and his publisher's efficient communication; almost no ink, yet precise and comprehensive transfer of information. Why is this so?

Compared to other consumer products, pensions exhibit a set of distinguishing characteristics that increase the difficulty to provide efficient product information.

The pension product is a contract, about money in the future, for money paid now. Typically, individuals are used to buying products or services and use contracts to do this, but are unused to using contracts to buy money in the future.

The long time horizon, specifically, the number of years between "purchase" and "delivery" produces inherent difficulties in understanding the product. In most countries, the contributions and pension weighted average wait-time between "purchase" (*i.e.*, payment of tax/contribution) and delivery of pension benefit is around 33 years.[2] This is probably a record when it comes to consumer products, consumer savings.

Pensions are sizable and play a crucial role in providing retirement income security for most individuals. In Sweden, the total amount of public earnings-related contributions and contributions to occupational pensions and private provisions amount to 30 percent of the wage sum. Pensions are for most individuals their single largest asset. However, they are seldom perceived as such, probably because public schemes in general are mandatory, and the "purchase" can be compared to forced savings. The forced payments, however justified, add to the problem of providing efficient pension information.

Furthermore, most products and services, like toothpaste, butter, cars, haircuts or vacations, can be consumed, appreciated and evaluated one by one. Retirement income in general comes from several sources. In many countries the retirement income system is described as a three-legged stool: public, occupational and private plans. Thus, information and education about pensions involve several actors. What matters for consumers is the sum of all pension benefits, costs and characteristics of the different pension policies. In some sense, it is all or nothing because retirement income and purchasing power is decided by the last Euro. The different providers have an interest, right and obligation to provide information about their own policies, while consumers are concerned with the sum which, on the other hand, is not known by any single actor. The value of pension information is severely diminished if information is only available on two of three plans.

Recent trends in pension reform around the world are likely to increase individual need for information about pension plans as well as the need for general financial literacy. Many countries are moving from defined benefit (DB) plans to defined contribution (DC) plans in both their public and private systems. In reforms of defined benefit plans, the choice of retirement is

becoming more flexible; for example, countries with fixed retirement ages are introducing the possibility of early withdrawal. Compared to defined benefit plans, defined contribution plans put more of the responsibility and risk to plan for retirement on individuals because they often require decisions about contributions, investment, and withdrawal of funds at retirement. Furthermore because of the increased financial pressures of aging populations, pension reforms often result in a reduction in replacement rates and hence could compel individuals to save on their own for retirement unless they are willing to accept lower pension benefits.

Considering the economic and social importance of pensions, any improvement in the efficiency in the design of pension information is important and possibly "profitable" for successful societies. How much income workers will have in retirement depends on a range of decisions – from how much to work and save to when to retire. In making sound decisions about retirement, savings, and portfolio allocation, adequate knowledge about the characteristics of pension plans is crucial.

A definition of pension information

Pension information can be defined as data on what an insured person can expect to receive from a pension plan that he or she has contributed or contributes to. Also important are data on contributions (taxes) paid by or on behalf of that individual. Both the amount of pensions and contributions are a kind of "accounting" information that is necessary but rarely sufficient to aid the insured or insurer in making well-informed decisions. To aid insured and insurer make well informed decisions pension information needs to be more ambitious in its attempt to be clear.

> Pension information is timely data on the effect of a course of events or action/inaction by an insured on the expected size of the pension benefit and the contribution.

To bring this ambitious definition a step further into mystery, we might add that:

> Further, pension information should include information on the expected variation – a confidence interval – around the expected value that is associated with a particular course of events or action/inaction.

Thus, pension information includes a scale of increasing sophistication that can be summarised as:

Accounting information

Action course of event information

Uncertainty (risk) information

Most existing pension information deals with all three levels. Focus is generally given to level one, while providing information on the uncertainty or risk in pension income is less common. However, many countries provide a mix of accounting information and how pension benefits vary with different actions or course of events.

This ambitious definition argues that the salient features of pension information is to provide data on how various actions or events affect the expected economic outcome, whether in terms of pension benefits or

contributions, or both. For example, information that would fit the description would be:

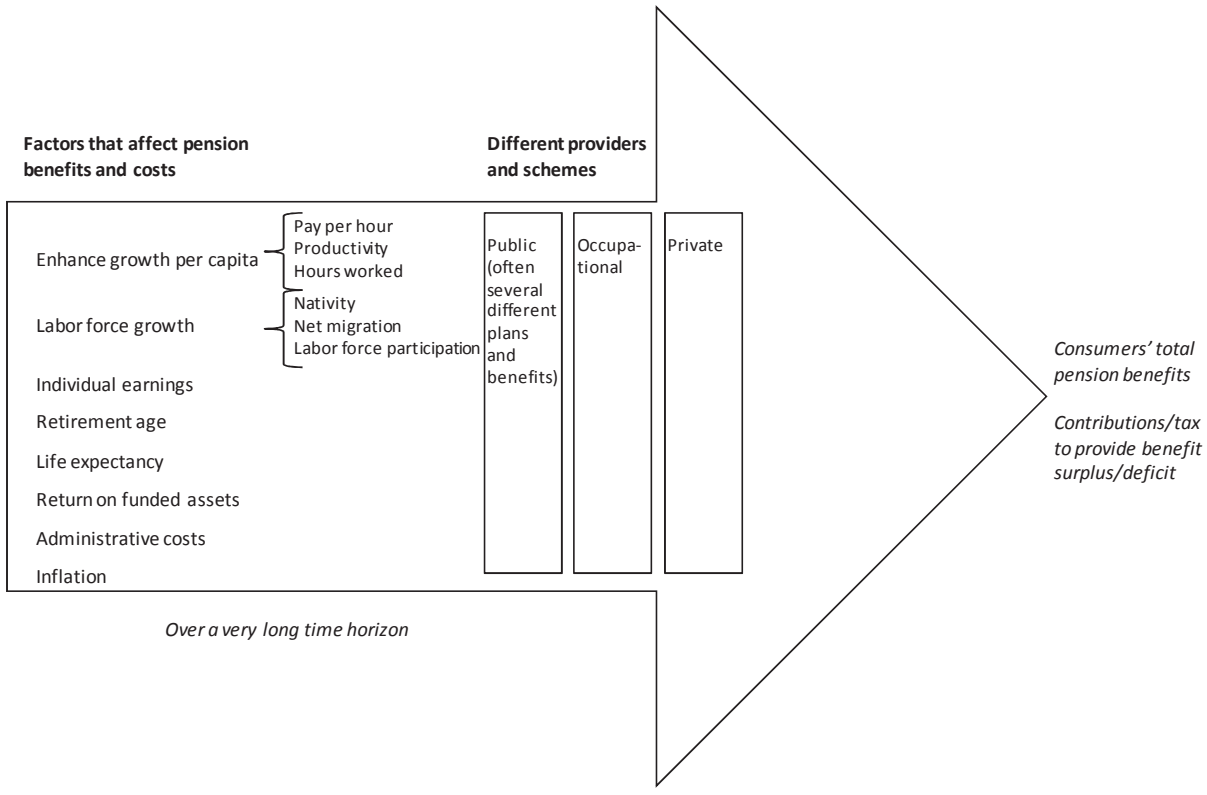
- how does a change in income change the size of my pension?
- how does a change in retirement age change the size of my pension?

Although it appears straightforward, this type of information could be difficult to convey or present if it requires a lot of extra information about the scenario. Pension information must be easy to communicate to a large and diverse group of "consumers" and it must have a reasonable degree of credibility.

Pensions are complex consumer products

Expected pension outcome and/or contributions are a function of long-term economic and demographic development that are notoriously difficult to predict on several important aspects. Table 1 summarises the variables that determine the size of the benefit/contribution.

Table 1. Factors that affect the size of pensions benefits and/or costs



It is well documented that individuals often have limited financial knowledge and know little about the characteristics of their public and occupational pension plans or how much to expect in retirement benefits.[3] As a consequence workers run the risk of reaching retirement with inadequate resources and may have to postpone retirement or accept lower consumption in retirement. Several studies have confirmed that financial literacy and planning have a positive effect on savings and retirement outcomes.[4] Individuals who approach retirement without planning have lower savings. Similarly, individuals with little financial knowledge are less likely to be successful planners and savers.[5] Studies have also shown that knowledge about pension benefits affects retirement behaviour. For example, workers who underestimate their benefits are less likely to retire early than those who overestimate their benefits.[6] The experience with 401(k) plans in the United States provides evidence that funded individual accounts introduce further difficulties for workers and that financial illiteracy can negatively affect outcomes.[7] A possible reason for the lack of financial knowledge is that learning about pensions is difficult. The complexity involved makes the costs of collecting information appear to be greater than the benefits of understanding the plans. The retirement process is something individuals only go through once and they can therefore not learn from their mistakes. In addition, for some individuals retirement can be viewed as something unpleasant and a cause for worry, which means that learning about pension systems and retirement can involve psychological costs. Furthermore, participants may not appreciate the benefits of collecting pension information because they expect that the public pension system will provide adequate benefits.

This report will discuss the challenges for pension information to approach the brevity and precision of the world's shortest mail conversation. The report will describe national pension information in twelve OECD countries. As a starting point for the comparative analysis, the next section discusses the content of pension information. The following section compares individual pension information across countries. The final section draws on the conclusions from comparative analysis to provide guidelines for best practice in the area of pension information.

The content of pension information

Pensions are complex. In order to make decisions about retirement and savings, individuals need information about the salient features of pensions. Many pension schemes also require workers to make decisions about participation, level of contributions, investment allocations and how to withdraw funds at retirement. When considering how various pension characteristics affect information needs it is important to keep in mind that the different plans involve different types of risks. For example, the level of future benefits will depend on a pension system's ability to meet its obligations. Pay-as-you-go (unfunded schemes) and partially funded defined-benefit plans are sensitive to demographic changes and many of these systems have projected financial deficits. These financial pressures can be remedied by reducing benefits or increasing contribution rates and this creates uncertainty about the level of future retirement benefits. On the other hand, individuals who are covered by funded, defined contribution schemes are subject to financial risks since benefit levels will depend on the rate of return in capital markets.

Following the definition of pension information in the previous section, this section discusses the content of pension information on three levels: accounting information, action/course of event information and uncertainty (risk information). The type of pension scheme – defined-benefit, defined contribution, or a hybrid plan – as well as the financing of the scheme will affect the information needs on each level.

Accounting information

The most basic information for participants is on coverage – participants need to know whether or not they are covered by a pension plan and how much they have contributed. Account information includes information on the components that affect participants' pension rights such as contributions, rate of return and administrative costs. Account information helps make a pension system transparent which can contribute to building trust in the system. Furthermore, account information helps communicate that pensions to a large extent are savings: by presenting the account balance (in a defined contribution plan), contributions and earnings history in a defined benefit plan; further, it becomes clear that pension rights and pension capital are built up continuously.

Account information needs to be comprehensive. People often have coverage from public as well as occupational schemes. In order to get a full picture of the level of benefits at retirement, workers need information from all sources and to assemble such information is a legal and technical challenge. It may also be something that pension providers, unions and employers might object to for other reasons than the legal and technical problems that the task provides.

Action/course of event information

On the next level, participants need to know how various actions and events affect future pension benefits. Knowledge of the level of benefits and how it varies with the choice of retirement age is maybe the most important piece of information for making decisions about when to retire and how much to save.

The first issue is how to present the level of benefits. In a traditional defined benefit plan, benefits are often determined by some combination of earnings and years of service and the benefit formula makes it possible to express the projected benefits as a replacement rate; specifically, how much of the final salary the pension benefit will replace. The advantage of providing a replacement rate is that it is relatively easy to compare to the type of advice that is often provided by financial planners about how much of pre-retirement earnings should be replaced to maintain livings standards in retirement.

In contrast, in a defined contribution plan benefits depend on the total amount contributed to the plan and the rate of return on those contributions. At retirement, the account balance is converted to an annuity or in some cases paid out as a lump sum. Because benefits are not defined but will depend on contributions and their return, both the benefit in absolute value and relative to "final" wage depends on more uncertain factors. Thus, the uncertainty of the projection increases.

The next step is to show how expected benefits vary with retirement age. Defined benefit plans usually specify a normal retirement age at which workers

are eligible for full benefits and an early retirement age at which workers can leave with reduced benefits. The benefit formula, combined with the specified retirement ages, means that defined benefit plans usually provide information such as: benefits will be 60 percent of earnings if retirement is at age 65 and 42 percent if retirement is at age 60. Furthermore, the formula often provides strong incentives to retire at the specified ages.

In principle, this makes it easy for workers in defined benefit plans to understand how much they will receive and at what age. In practice, however, this is not always the case. One problem is that it may be difficult to convey that the replacement rate at the early retirement date depends on the normal retirement age and that increasing the normal retirement age will affect benefits if drawn early. For example, in the United States a large share of workers starts withdrawing benefits as soon as possible at age 62. The normal retirement age was 65 until 2000 but has been gradually increased since then and will be 67 for people reaching age 62 in 2022 (Table 2). For those who reached age 62 in 2004, the normal retirement age was 65 and 10 months. The early retirement age will continue to be age 62. The gradual increase in the normal retirement age is equivalent to a benefit cut and those who continue retiring early will receive a lower monthly benefit.[8] So far, workers have not begun to withdraw benefits later but the normal retirement age has so far increased "only" by 10 months and it will not be until workers born in the late 1950s and early 1960s reach retirement age that the full effect of the increase in retirement age will become clear.

In Germany the minimum age for claiming old-age benefits will be increased gradually for individuals born after 1947 so that it will be 67 for those born in 1963.

Defined contribution plans need to specify a minimum retirement age but need not specify a normal retirement age. But because of the difficulty in converting the account balance to a monthly benefit it may still be difficult to figure out how the benefit will vary with the choice of retirement age. Furthermore, in converting the benefit to an annuity, life expectancy matters. In the Swedish notional defined contribution scheme as well as in the premium pension system, benefits are computed using life expectancy at retirement. This means that when the account balance is converted to a benefit, the annuity depends on the remaining life expectancy, at the participant's chosen age of retirement, for the beneficiary's cohort. Thus, for a given retirement age, say 65, annual benefits will decrease as individuals live longer. In order to receive the same replacement rate, an individual has to work longer.

Table 2. Normal retirement age

	USA	Germany	Sweden *
Age cohort	**Year + months**		
1937	65	65	65
1938	65 + 2	65	65 + 2
1939	65 + 4	65	65 + 2
1940	65 + 6	65	65 + 3
1941	65 + 8	65	65 + 3
1942	65 + 10	65	65 + 4
1943	66	65	65 + 5
1944	66	65	65 + 6
1945	66	65	65 + 8
1946	66	65	65 + 9
1947	66	65 + 1	65 + 10
1948	66	65 + 2	66
1949	66	65 + 3	66 + 2
1950	66	65 + 4	66 + 2
1951	66	65 + 5	66 + 4
1952	66	65 + 6	66 + 6
1953	66	65 + 7	66 + 8
1954	66	65 + 8	66 + 9
1955	66 + 2	65 + 9	66 + 10
1956	66 + 4	65 + 10	66 + 11
1957	66 + 6	65 + 11	67
1958	66 + 8	66	67
1959	66 + 10	66 + 2	67 + 1
1960	67	66 + 4	67 + 1
1961	67	66 + 6	67 + 2
1962	67	66 + 8	67 + 2
1963	67	66 + 10	67 + 3
1964	67	67	67 + 3
1970	67	67	67 + 7
1980	67	67	67 + 11
1990	67	67	68 + 2

Source: Orange Report - Annual Report of the Swedish Pension System 2007

How pension benefits are affected by job mobility is another important factor in estimating the expected benefit at retirement. The benefit formula in a defined benefit plan often replaces earnings just prior to retirement which means that a job change could have a negative impact on benefits. In a national scheme this is less of a problem because workers are covered by the same scheme regardless of where they work but many traditional defined benefit

plans base benefits on earnings just prior to job termination. Defined contribution plans do not have this problem.

Uncertainty (risk) information

Making projections about retirement benefits is difficult. On the one hand, projections should include enough detail to provide the best possible projection, and on the other hand they should be simple enough to communicate to participants. Furthermore, by providing a single amount, the projection gives an appearance of certainty although outcomes are very uncertain. A stochastic projection would convey the uncertainty but would be difficult for participants to interpret.

In funded defined contribution plans individuals manage their own financial accounts, and make decisions about investment allocation and changes in the allocation over time. Thus, participants bear the entire risk of their investments. This requires knowledge about financial markets and how to balance risk and return, something that can be difficult.[9] In order to make investment decisions participants need to understand how future benefits will vary with choice risk, in particular, pension information needs to convey the variability of benefits.

Most public pension schemes are funded on a pay-as-you-go basis and many countries face long-term financing deficits in their pension schemes. For a defined-benefit plan this means that benefits will either have to be reduced, retirement age increased or contributions increased for the plan to meet its obligations. For example, the retirement age in the U.S. Social Security system is gradually being increased and in spite of this decision to improve the financial balance of the scheme, discussion of Social Security reform has been on top of the political agenda for over a decade. In the case of financial imbalance, pension information needs to convey that benefits or contributions have to change in order to sustain the system.

Country experiences

The changing pension landscape has prompted government agencies, firms, and pension administrators to engage in increased financial education and information campaigns to participants. Across countries, pension plans put more responsibility on participants to make decisions about pensions. In this section, pension information in Australia, Canada, Chile, Finland, France, Germany, Italy, Japan, Mexico, Singapore, Sweden, the United Kingdom, and the United States is analyzed. The focus is on pension/account statements but we will also discuss other pension information, in particular the use of websites.

The starting point for the analysis is the Swedish Orange Envelope. The Orange Envelope was introduced in 1999 in connection with the Swedish pension reform and is the cornerstone of communication to participants about the pension system. The pension reform changed the provision of public pension benefits in a fundamental way and redefined the benefit promise.[10] In the new system, benefits are closely linked to contributions and lifetime earnings will determine benefits. The reform recognised the impact of increased life expectancy on the financial stability of the system and built in an automatic adjustment of benefits in response to changes in longevity. The design means that additional responsibility is put on participants. The new system also puts

increased responsibility on individuals to plan for retirement through the introduction of a funded individual account component.

The Orange Envelope is sent out annually and includes account information as well as a projection of benefits. In addition to providing information about expected benefits, the Orange Envelope summarises how the new pension system works and highlights to participants that benefits are determined by lifetime earnings (The Orange Envelope is shown in Appendix 1).

In addition, to the public scheme, occupational pension plans comprise approximately 15 percent of retirement income for individuals with average earnings in Sweden and in order to judge whether benefits will be adequate, participants need projections of total retirement income. The demand for comprehensive information was clear from the reactions from participants when they received their first statements. Therefore, the Swedish Social Insurance Agency and the Premium Pension Authority together with the insurance companies for the occupation plans, after about four years of negotiations and work, launched the website (www.minpension.se) in 2004. The website presents individual projections of both the public pension and occupational pension benefits and presents the total projected pension as well as its components.

For the funded individual account component, the Premium Pension Authority (PPA) – the government agency that administers the plan and acts as a clearinghouse for fund selections – provides information on fund choices, investment risk, and fees and has its own website where participants can review and manage their accounts. The funds are listed by type (interest-earning, mixed, life-cycle, and equity funds), and for each fund the catalogue provides information on the rate of return for the past five years, the risk (measured as the standard deviation of returns for the past three years), and the fee.

The content of the Orange Envelope is used as a reference point in the comparison across countries. To collect information a questionnaire was sent to all countries. The questionnaire included questions on a wide range of issues related to pension information[11]. In particular, we have collected the following information for the comparative analysis:

- Type of statements, target groups and frequency
- Information goals
- Information included in the statement

Table 3 summarises the information content across countries.

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Table 3. Information in pension statements in selected OECD countries

	Sweden	Chile	Finland	France	Germany	USA	Canada	Mexico	UK	Japan	Singapore	Australia	Italy
Type of scheme	DC	DC	DB		Mixed	DB		Mixed	Mixed	DB	DC	DC	Mixed
Retirement age	Flexible from age 61 (cf. Table 2)	Women 60 years Men 65 years	62–68 years	From age 60	63–67 years (cf. Table 2)	62–67 years (cf. Table 2)	Flexible from age 60	From age 60	Women 60 ** Men 65 years	60 / 63	62 years	Women 63-65*** Men 65 years	Women 60 years Men 65 years
Target group	All with pension credits	20 years and older	All aged 18–67, but not to pensioners	Year 2008*: Born in 1950, 1951, 1958 and 1963	From age 27 if at least 5 years of contributions	From age 25	Contributing citizens	All (5 age groups)		…	All members		All insured
Frequency	Yearly	Yearly	Yearly	Yearly	Yearly	Yearly	Yearly	Twice a year	Yearly	Yearly	Yearly	Yearly	Yearly
Is the system described in the pension statement?	Yes	No	Yes	No	Yes	Yes	Yes (in appendix)	No	Yes	No	No		No
Includes information on system stability	No	No	No	No	Yes	Yes	No	No	No	No	No		No
Are other old-age benefits reported on the statement?	No	No	No	No	Yes, invalidity benefits	Yes, invalidity and survivors' benefits	Yes		No		N/A		
Information on contributions, credits and fund development	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes		Yes

Table 3. Information in pension statements in selected OECD countries *(continued)*

	Sweden	Chile	Finland	France	Germany	USA	Canada	Mexico	UK	Japan	Singapore	Australia	Italy
How are contributions (payments) to the pension system stated?	Total from previous statement + last years' contribution = accumulated total	Previous balance, detailed monthly contributions, fees deducted and current balance	Not stated	Income per year and earned pension credits	Total contributions during working career + total contributions of the employer + total other contribution paid from third side = total contributions during working career	Pensionable income per year	Contributions per year		No				
Covered earnings/ earnings record	Covered earnings but no earnings history	No	Yes	Yes	Yes from age 55	Yes	Yes	No	Yes	No	No	Yes	No
Projection	Projection from age 28	Projection from age 30	Projection from age 50	Projection to those born in 1950 and 1951	Yes	Yes	Yes	No	Projections for two groups: under and over age 50. Different mailings to men and women	No	No		No
Are projections given in current monetary value?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	N/A		N/A	N/A		N/A

Table 3. Information in pension statements in selected OECD countries *(continued)*

	Sweden	Chile	Finland	France	Germany	USA	Canada	Mexico	UK	Japan	Singapore	Australia	Italy
The future income development of the insured	Same as latest income in 0 percent growth scenario Same as latest income + 2 percent per annum in 2 percent growth scenario	Same as latest income	An average of the income the last 5 years	Same as latest income	An average of the income the last 5 years General wage growth by 1 and 2 percent respectively	Same as latest income	Average income since 1966 or age 18			Same as latest income	N/A		
Is "guaranteed pension" included in the projection?	Yes	No	No	N/A	No	No	Yes	N/A		N/A	N/A		N/A
(Return on capital assumptions)	3.5 percent (real) in 0 percent growth assumption 5.5 percent (real) in 2 percent growth assumption	5 percent annual real rate of return	N/A	N/A	N/A	N/A							
Legal document	Yes	No	No	No	No	No	No	No		No	N0		No
Cost per statement	0.50	No data	3	0.71	No data	0.24	0.72 $ / 1.44 $	No data	No data	No data	No data	No data	No data

* Yearly statements are phased in 2007–2011, thereafter account statement every five years from age 35 and projection every five years from age 55.

Type of statements, target groups and frequency

All countries provide personalised statements to participants. The information is provided annually with the exception of Mexico where information is provided at least twice a year.

Personal statements are a relatively new phenomenon. In Chile, statements were introduced in 1981, but in the remaining countries, most automatic statements were introduced in the late 1990s or early 2000s. In many cases, the individual statements are introduced in connection with a pension reform.

Pension benefits are determined by participants' lifetime careers, yet it is rarely something individuals think about throughout their lives. The need for and interest in planning for retirement varies with age. For a young person – finishing school, planning for a family and buying a house are activities that are likely to be the focus. In addition, decisions early in life could affect benefits; for example, in many schemes lifetime earnings determine benefits so entering the labor market late could have negative consequences.

One question of particular interest is whether all participants should receive annual pension information or if the information should be targeted to certain groups. Different solutions are found across countries when studying which "customer groups" are considered important to target. Some administrations send statements to all participants, while others choose to target specific age cohorts or "life events". The reasoning behind the different choices is typically connected to the type of scheme and the information presented in the statement.

The Orange Envelope is sent to all participants as soon as they have started to contribute to the scheme. This is also the case in Canada, Italy, Singapore and the United Kingdom. A few countries also continue sending statements after a participant has started to withdraw benefits; for example, the Orange Envelope provides information to retirees about their benefits. In the Swedish system, it is possible to withdraw partial benefits; for example, a participant can withdraw 50 percent of their benefits and can continue working 50 percent, and for this group the Orange Envelope continues to provide information on how benefits vary with labor supply.

Several countries have chosen to target certain age groups. In Chile, statements are sent out to those 20 years and older, in the United States statements are distributed to participants 25 years and older. In Germany, participants need to be age 27 and have contributed to the system for five years. France started sending out statements during 2007 and is phasing in the statement distribution (see Table 4). All individuals from age 35 will receive statements every five years get a statement showing their pension credits.

In Mexico, changes to the pension system implemented by March 2008 will require changes to the pension statement. Most workers are covered by a defined contribution pension in which investment options differ by age. In view of these changes, five different statements will be mailed to participants based on age.

Japan sends statements to participants aged 35, 45, and 55 but plan to send statements to all participants staring in April 2009.

When pension statements were introduced, it was common that participants had to request the information. In the United Kingdom, individual pension forecasts issued on request were introduced in 1988. In Canada, statements were introduced in 1966, but had to be requested until 1985 when participants started to receive them every five to seven years. Beginning in 1999-2001, statements are mailed to all participants. Canada also focuses its information on certain life-stage events, for example when individuals start working and contributing to the Canada Pension Plan, they receive a "welcome letter" and a statement is sent to people nearing retirement age. The approach is dubbed SmartSOC and has been developed in order to make mailings more targeted and personalised. For example, participants aged 70 to 99 who have not yet applied for benefits will receive a statement, a letter inviting them to apply for their benefits, a simplified application and an information sheet detailing the supportive documents required and a pre-addressed return envelope.

"Everything should be made as simple as possible, but not simpler"[12]

Age is the most common factor used for segmenting pension information. Young individuals are excluded from receiving personalised statements in several countries. The rationale is that personal information is less relevant for young individuals because they are far from retirement and have only few pension credits.

Another reason for targeting information is that some customer groups can be difficult to reach. In some countries participants may be difficult to reach because they reside in remote areas or because of low educational level. Chile has put a lot of effort into simplifying the information in the statement, and making the information accessible/understandable for all participants. To this end, the statement was tested in focus groups with participants from different socio-economic groups. The different groups assimilated the information in very different ways and as a result the Chilean pension administration gave up the aim to reach all pension earners, and have settled on the average-income earner as the typical target person. Instead of persevering in an impossible task, the Chile administrators focused on the design of the pension system. The Chilean pension system is fully funded and requires participants to make fund choices. In order to make it easier for participants, the default option should provide a good choice for all and not require extensive financial knowledge.[13]

Paper statements via regular mail is the preferred communication channel and not surprisingly still regarded as the most reliable channel of information distribution. Most countries however, complement with online services. As the Internet generation ages and computer accessibility and literacy mature, online information is likely to increase. Finland, which will send out statements for the first time this year (2008), has put forward a bill aiming to let the individuals choose their preferred communication channel. Civil servants do not get a statement via regular mail but get access to the information via Internet.

Information goals

The overall information goals are similar across countries: to provide information on contributions to the system and expected benefits. An important information objective is to trigger participants to think about retirement, consider how their life choices affect benefits and make informed choices

regarding the need for additional savings to provide for an adequate retirement income.

Many of the countries included in the study have recently reformed their pension systems, or are likely to in the future. A personalised pension statement can fulfill many information objectives in connection with a reform: such as informing about the new scheme and establishing trust. Similar to the Swedish case, personal statements have been introduced in connection with pension reform in many countries. In Sweden, the Orange Envelope was the cornerstone in the information campaign when the new pension system was implemented and therefore, the design and color of the envelope was important. The choice of using the Orange Envelope as messenger has successfully branded the color orange and the envelope as an "ambassador" for the new scheme. The success of the Swedish information in this respect has inspired other countries to follow suit. In France, the envelope is blue and in Germany it is yellow. Finland feared a brightly colored envelope would be mistaken for advertising, and chose white as it has an official connotation.[14]

In Germany, the pension scheme has been reformed in several steps since 1992 and as a result replacement rates have decreased. An important goal is therefore to provide such information that the participant can estimate if additional retirement savings are needed. The United Kingdom, where retirement income comes from several sources, has a similar goal and the statement includes an accompanying leaflet with information on different savings options. In Mexico, a 1997 reform replaced the defined benefit plan with a defined contribution plan with individual accounts and the goal has been to inform workers on choosing funds.

In addition to providing account information and information on projected benefits, statements therefore typically include information on the pension system and how it works. The Orange Envelope presents the system's main principles and also point out that the retirement income comes from several sources. In the U.S. statement, the system information includes a description of the projected financial short falls and the required remedies to restore balance so that individuals can gauge their benefits. Other countries choose to refer to websites for system information.

A few countries have legal requirements to provide pension information, for example Sweden and France have an objective for participants to check that their earnings and contributions are correct. In several countries (Australia, Canada, Finland, France, and the USA) the statement urges participants to check that their information is correct. In Sweden, part of the Orange Envelope is a legal document. This is also the case in Australia. One of the pages includes a statement of the yearly contribution and participants are expected to check that the contribution is correct and if otherwise, make a formal complaint within a certain time period.

All countries agree that the information needs to be transparent and easy to access. The Orange Envelope presents the most important information – expected pension benefits and how they vary with retirement age on the first page of the statement. Similarly, Germany's goal is to present the most important information on one page. In Australia the purpose of the personal statement is to reduce requests for information from participants. By providing information automatically and easily accessible customer satisfaction is improved and the administrative burden is lessened.

Information on earned pension credits

Most statements include information on how much participants have contributed to the system that is most statements include the first level of information and accounting information. The information differs between defined benefit and defined-contributions schemes. In a defined-contribution scheme, providing information on contributions is straightforward. In defined-benefits plans, the information is often less transparent because contributions and taxes may not be recorded for each participant.

The Swedish system is a defined contribution scheme: the contribution rate is 18.5 percent of earnings up to a ceiling – 16 percentage points are contributed to the pay-as-you-go portion of the scheme and the Notional Defined Contribution (NDC) scheme, while 2.5 percentage points goes to the funded individual account, the Premium Pension.

In the Orange Envelope, effort has been put into providing transparent account information. The envelope therefore includes separate account information on the NDC account and the Premium Pension account. The account information shows the beginning balance, contributions during the year, the rate of return, administrative costs and outgoing balance.[15] For the funded individual account, information is provided on the selected funds; however, the Orange Envelope does not provide information on how to pick funds. This information is made available through other information channels.

Thus, participants are given a full picture of their pension accounts to date. The presentation makes clear each participant's claim on the system. By comparing the pension account to a bank account, the Orange Envelope helps communicate to participants that the public pension system is savings for retirement.

The defined contribution schemes in Mexico and Chile are fully funded and provide information on account balance and the transactions during the year.

In Singapore the statement (Statement of Account) consists primarily of transactional information that members can check against their own records. The statement has more similarities to an account statement from a bank than the statement content that other countries usually choose to include. What is specific for the Singaporean statement is that the designated space for personalised messages takes up about half the available space.

In the United States where the public pension plan is a defined benefit plan, information is provided on participants' earnings histories as well as the contributions paid to the system. Similar information is provided in the Canadian statement and in Germany, where the statement includes information on acquired pension entitlements. In the United Kingdom, no individual information on contributions or taxes is provided.

Anecdotal evidence in several countries shows that participants often mistrust the pension system to fulfill its obligations. By making the connection between pension contributions and savings, the individual statement can contribute to the understanding that the pension system is a contract between generations and that participants have a claim on the system.

Information on expected benefits

A projection of future pension benefits and how it varies with retirement age is necessary information in order to make decisions about work and savings. In defined benefits plans, the benefit formula usually specifies the level of benefits as a replacement rate, so participants may have a fairly good grasp of the level of benefits through general knowledge about the pension system. However, benefit formulas can be complicated and in many defined benefit schemes retirement age is being raised. In a defined contribution plan with fixed contributions, a projection is necessary to inform about expected benefits.

Most countries provide projections in their statements. Thus, in addition to providing account information (level 1), most countries also provide action or course of event information. In general, the projections also show how benefits vary with retirement age. In the Orange Envelope, this information is presented on page one. Pension benefits for participants under the age of 60 are shown at the earliest age they can be withdrawn (age 61), at age 65 and age 70. The purpose is to show that working longer will result in higher benefits. The statement for persons 60 and older, show benefits for additional ages between 61 and 70, which ages depend on the participant's age. In that way, the Orange Envelope provides detailed information on how benefits will vary with retirement age for individuals in the process of planning their retirement.

In the United States, the annual statement provided a projection of benefits at the normal retirement age. Because the normal retirement age is increased gradually, individuals receive a projection for the normal retirement age for their cohort (see Table 3) – for example, for those born in 1956 the normal retirement age is 65 years and 10 months. By giving cohort-specific information, it becomes clear that the new normal retirement age of 67 is being phased in gradually.

The United Kingdom, pension projections for the state pension are given for the normal retirement age in the United Kingdom, currently 65 for men and 60 for women.[16] Thus, the projections differ for women and men. The information accompanying the projection differs by age. For men and women under the age of 50, the focus is on the need for additional savings and the statement includes a range of question on future employment, earnings, coverage by other pension plans, and the possibilities to save out of current income to aid the participant. For individuals over age 50, the message is focused on retirement planning and the statement urges participants to take stock of current savings and consider expenditures during retirement. The U.K. statement contains less information on participants' pension credits and contributions than other countries, yet it includes practical tips on how participants should use the information often absent in other statements.

In order to project benefits, pension administrators have to make assumptions about future earnings; specifically, wage growth and rate of return. The assumptions in the forecasts are surprisingly similar across countries. Future earnings are usually based on current income, whereas in Finland and Germany an average of the last five years is used. Typically, the assumption on wage growth is 1 or 2 percent. Because the projection presents benefits in the future, participants need to know how they should interpret the future amount. In the Orange Envelope, two scenarios are presented: 0 percent wage growth and 2 percent wage growth. The rate of return on the funded individual account is assumed to be 3.5 percent higher than earnings growth. In the 0% scenario,

the projected benefit can be interpreted at the current price and wage level; participants can compare the projection with their current earnings to get an estimate of the replacement rate. The projected benefit in the 2 percent scenario has to be compared to future earnings, and although final earnings are presented at age 65 in the envelope, a common mistake is to compare the projection in the 2 percent scenario to current earnings. By providing different scenarios, the statements indicate that benefits will vary with economic growth but because all projections are static they do not convey the uncertainty involved.

The further from retirement, the more uncertain the projection becomes. For an individual in her or his 20s and 30s, the projection can be considered as an example of a possible outcome. Future earnings are uncertain and the purpose of providing a forecast for this group is to encourage them to think about how the labor market and the future labor supply can affect benefits. For someone in his or her 40s or early 50s, the projection is more on target. The prime-age group is established on the labor market and their earnings are more stable. For this group, the projection is an important tool when considering if additional savings are needed. For individuals approaching retirement, the projection is to a large extent based on actual earnings and only the last few years need to be predicted. In this case, the forecast provides information on how benefits vary with retirement age.

In the Orange Envelope projections are provided to participants 28 years and older. By that age, most individuals are established on the labor market so a projection is useful. In the Chilean system, projections are given from age 30.

Finland has chosen not to provide projections to participants under age 50, as they fear the high risk of inaccuracy will be misinterpreted and taken as an incentive not to work, the implication being it does not pay to work. The disadvantage is that it may be too late to start thinking about additional savings during the last 10-15 years before retirement.

Mexico and Japan do not provide projections; in Japan it is possible to request a projection. In France, the statement includes projections to those born in 1950 and 1951.

Information on other benefits

In the United States, Canada and Germany, the statement provides information on disability benefits and survivor benefits. The statements in all countries only provide information on public benefits, although retirement income generally comes from several sources. This is a disadvantage; participants may wrongly conclude that retirement benefits are lower than they actually are. In the Orange Envelope, an additional information sheet has been included during the last couple of years to direct participants to a website that includes information on both their public and occupational benefits.

System-level information

The Orange Envelope gives a short description of how the pension system works. The focus is to highlight the type of information that is most relevant to participants in order to make decisions about work and savings.

The U.S. statement informs participants that the system needs to be changed (cut in benefits or higher taxes) in order to be financially sustainable. The accompanying text clearly spells out that the benefits presented in the statement are not guaranteed. The German statement informs participants that public pension benefits may not be sufficient in the future to maintain their standard of living and advises participants to consider private and occupational pension plans. These are the only statements that provide risk information on a system level.

In the United Kingdom, the information about the state pension clearly informs participants that these benefits will be insufficient. The U.K. statement also introduces a topic often absent in pension information: how much income is needed in retirement? Because expenditures often change as individuals age (no longer have to support children or pay off mortgage, etc.), retirement needs are likely to differ and the statement provides a set of questions so that participants can evaluate what an adequate retirement income is.

Cost per statement

An important factor to consider when deciding the best means of disseminating information is naturally the cost.

Using Sweden as an example, having sent out statements under the new scheme for almost ten years, the cost has been minimised and is today less per statement than standard letter postage. For 2008, some six million envelopes have been distributed.

Production is initially cost heavy, with additional cost reduction being dependent on the level of atomisation, evaluation and consequent development from year to year and on the specific information goals of the statement.

Web applications

Almost all countries offer the possibility to make or request a projection online. The exceptions are Germany and Australia, although German participants can receive a CD-rom with a program to calculate their future pension. The projections in the statement provide one or two scenarios (see Table 4). The services on the web range from the possibility to request a projection that will be sent by regular mail, via interactive projections when feeding a calculator different variables to advanced applications that aggregate public, occupational and private pension schemes.

Sweden and Denmark (not included in this study) are forerunners in web applications where participants can adapt his/her forecast according to various factors, such as income growth, fund growth, retirement age, etc.; occupational and private pension schemes are also included to give the total retirement income.

The Swedish website MinPension.se ("my pension") has since its inception in December 2004 attracted more than 660,000 registered users, the number of visits per day ranges from 10,000 to 20,000.[17] The site is the result of collaboration between public and occupational pension providers. The site is marketed in several ways to draw traffic to the site and raise awareness of the three-tier pension system. To this end, a sheet describing the site has been

appended in the Orange Envelope during the past two years. Furthermore, the collaborating partners display a link to the website on their websites.

The United States provides a calculator to project benefits under various scenarios. Singapore has a suite of online tools and calculators to help the insured plan the use of their savings. Mexico has a web page with a calculator where, according to the variables of commissions and returns, a projection is made for the pension that will be obtained.

In addition to the internet, some countries are introducing new media in their pension communication. Some countries are set against using "new media", at least today, because of (perceived or real) security issues, or privacy concerns.

Others countries (Mexico) battle distrust in the pension scheme, administration and financial systems. Using what may be perceived as intrusive media would in such situations not enhance public trust in the legitimacy of the system.

Singapore sends emails to members who subscribe to the "CPF eMail Alerts", to keep them posted on latest updates. Members can choose what topics they are interested in. Singapore is currently contemplating the possibility of using interactive media such as podcasts or forums, to communicate with members.

Japan offers a service that provides a brief summary of the calculation of the future pension benefit to mobile phone users.

Australia uses text messages (SMS) to contact customers who need to get in touch with Centrelink for one reason or the other.

The need for financial capability

The changing pension landscape together with other developments in personal finance has increased the need for financial capability. New financial instruments, easier access to credit, etc. increase the number of financial decisions individuals have to make and the complexity of many of the products makes increased financial knowledge necessary. The introduction of funded individual accounts in public and occupational pension schemes means that many individuals have to make investment decisions for the first time. To make rational investment choices requires knowledge about financial markets, risk, return etc. Because participants bear the risk of their decisions, the lack of knowledge may have a negative impact on retirement income.

A possible reason for the lack of knowledge is that pensions are complex financial instruments and learning about pensions is difficult. The complexity involved makes the costs of collecting information appear greater than the benefits of understanding the plans. Furthermore, the retirement process is something individuals only go through once; participants do not have the benefit of learning by doing. In addition, old age is often viewed as something unpleasant and a cause for worry, so learning about pensions and retirement can involve psychological costs. Finally, participants may not appreciate the benefits of collecting information because they expect that the public pension system will provide adequate benefits.

The widespread lack of financial knowledge about pensions has prompted policy makers and employers to provide more information about pension plans through information campaigns and financial education programs in the

workplace. Financial understanding is crucial in order to make rational choices in schemes that are moving from state involvement to individual and personal responsibility. In the United Kingdom, a national strategy for financial capability has been launched. In Sweden and other countries, introducing financial education in schools is being discussed.

Singapore undertakes several initiatives to increase awareness for educational purposes, publish corporate newsletters in major newspapers, run traditional media campaigns and organise road shows and other events.

Does the information work?

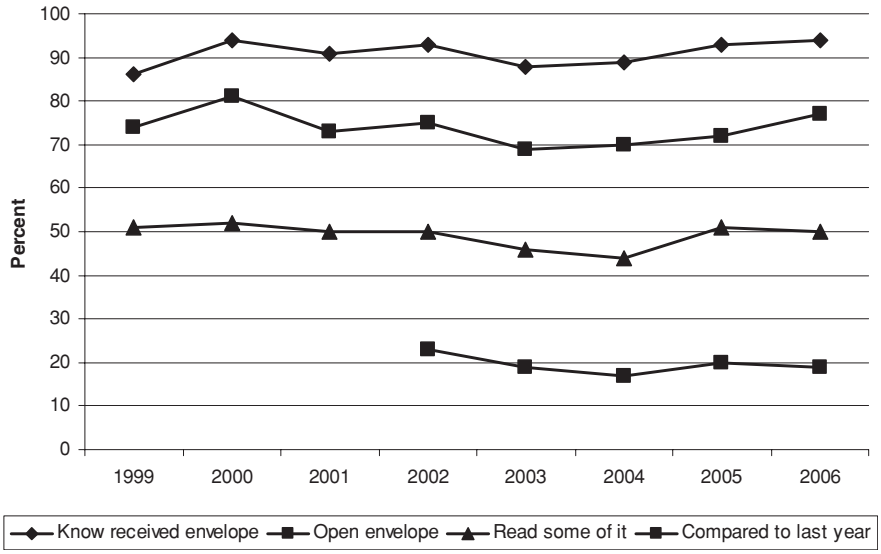
In order to gauge the effectiveness of communication with participants, a few countries have conducted surveys.

Sweden

The Swedish Social Insurance Agency conducts an annual survey about the Orange Envelope to examine how participants use it and how well it communicates information about the pension system. The survey has been conducted annually since 1999. The sample is 1,000 individuals between the ages 18 and 62 and interviews are conducted by telephone. The survey asks respondents to rate their knowledge of the pension system and indicate to what extent they read the information provided in the Orange Envelope. It also includes questions to test participants' knowledge of the system. The survey includes demographic and economic background variables such as age, gender, marital status, education, and income. In 2006, the average age of respondents was 41 and slightly more women than men answered the survey. About 30 percent of these respondents have a college degree and most respondents have incomes in the range of 17,000 to 25,000 SEK. Slightly more than half have private pension savings.

Most people know about the Orange Envelope; Figure 1 shows that the share of participants who know that they have received the envelope has held steady at around 90 percent. But those who made use of it are a much smaller percentage. Roughly three-fourths of all participants say they have opened the envelope and about half report reading at least some of the content.

Figure 1. Share of participants that know about the Orange Envelope



Source: Survey of the Orange Envelope.

Not surprisingly, older participants read the contents of the Orange Envelope to a greater extent than younger participants, but the differences are quite small with the exception of those younger than 25 (not shown in Figure 1). The data also show that low-income individuals are less likely to examine the Envelope's materials. Participants who have private pension savings, for example an individual retirement account, are more likely to open and read the Envelope. Only 20 percent of all participants had compared the information in the current Orange Envelope with the previous years' content. Thus, the group who is most likely to read and examine the materials corresponds to the group of participants who are most likely to already have some financial literacy. The pattern has changed little since the introduction of the Envelope, so it is not clear whether the Orange Envelope has attracted less interested participants.

To help participants translate their account balances to monthly benefits at retirement, the Orange Envelope includes a benefit projection. The benefit projection calculates the expected monthly benefit at three different retirement ages: 61, 65, and 70. Because it is difficult for participants to make these kinds of calculations on their own in a defined contribution plan, this information is clearly important in order to assess whether retirement benefits will be adequate. The results show that among those who *opened* the Envelope, about 70 percent looked at the benefit projection during the first years the Envelope was sent out. By 2005, the share had increased to almost 80 percent.

The Orange Envelope has been successful to the extent that almost everyone knows about it and also reads at least some of its contents. The question is whether the Orange Envelope has improved knowledge about the pension system. Because the survey is a cross section and no information is available on the level of knowledge about pensions before the Envelope was introduced, it is not possible to link the use of the Orange Envelope to how knowledge about the

pension system has evolved. However, in addition to self-reported knowledge, the survey includes some questions that try to elicit participants' actual understanding that can give an indication of how well participants understand the system and to what extent the Orange Envelope has contributed to that knowledge.

Self-reported knowledge about the pension system is fairly low and more than half of participants view their knowledge as poor. Self-reported knowledge peaked in 2002 when 48 percent of respondents reported that they had a good understanding of the system. By 2006, this share had decreased by 10 percentage points. The share of participants who report that they do not understand the new system at all is less than 10 percent; this share has decreased somewhat in the last few years.

Men view themselves as being more knowledgeable than women and formal education and income appear to be positively correlated with knowledge about the pension system. One measure of financial literacy could be previous experience with saving for retirement. About half of the respondents in the Swedish survey have private pension savings such as an individual retirement account, an indication that they have spent at least some time thinking about retirement savings. Having a private pension appears to be correlated with slightly higher self-reported knowledge about the public pension system – about 50 percent of respondents who have private pensions report that they have poor knowledge of the system compared to 60 percent among those without such savings.

Among those who have read at least some parts of the Orange Envelope, the fraction that reports having good knowledge of the system is about 13 percentage points higher than among those who had not read the contents. In recent years, the share of those with poor knowledge or no knowledge at all has increased somewhat.

The survey also includes a set of questions to gauge actual knowledge of the pension system. Perhaps the most important piece of information about the pension system for participants is that benefits depend on lifetime labor supply. The share of participants who know that lifetime earnings determine benefits peaked in 2000, the year after the new pension system was introduced and an extensive information campaign was conducted, when slightly more than half of participants correctly answered a survey question to gauge this knowledge. Among those who read at least some of the Orange Envelope contents, the share is only slightly higher and follows a similar pattern over time. Overall, men are somewhat more likely than women to have knowledge about the basic principle of the pension system. Not surprisingly, income and education are also important determinants of actual knowledge – participants in the highest income class and with college degrees have better knowledge of the system than participants with low incomes and fewer years of education.

Knowledge of the pension system can also be measured by how well participants know the components of the system. The results indicate little understanding of the system. Overall, 75 percent of participants cannot name any part of the pension system. Only about 10 percent of participants can accurately name the notional defined contribution scheme (NDC) benefit, the main component of the system. It is also surprising that so few participants know about the guarantee benefit; a possible explanation is that few workers in the future will depend on guaranteed benefits.

Much of the public debate about the pension system has evolved around the Premium Pension and investment decisions. Anecdotal evidence indicates that participants have a skewed view of the importance of the Premium Pension and believe that investment decisions will determine most of the benefits. This view is confirmed by the survey of the Orange Envelope; participants are much more likely to know about the Premium Pension than about the NDC component. Again, participants who have read the contents of the Orange Envelope are slightly more likely to be aware of the different parts of the pension system. A possible explanation is, of course, that individuals who open and read the envelope are the ones that are interested in and have previous knowledge of the pension system.

To summarise, most people know about and read the contents of the Orange Envelope. Still, only about 40 percent understand that lifetime earnings determine benefits, one of the most important characteristics of the pension system. Even fewer know the different components of the system. But although self-rated and actual knowledge is somewhat low, participants have confidence in the system. More than one-third of participants are very confident about the system and almost half have at least some confidence in the system. The share that has no confidence in the system has decreased from 20 percent at the time the new system was introduced to about 13 percent in 2006. The level of confidence could indicate that the overall information campaign has been successful in communicating that the pension reform has created a financially stable system.

In 2008, the Swedish National Audit Office evaluated the information in the Orange Envelope and the efforts by the Swedish Social Insurance Agency and Premium Pension Agency. They concluded that the Orange Envelope contained too much information and recommended the government review its contents. In particular, the Audit Office thought too much information was provided on details that are not directly associated with decisions on work and savings, such as administrative costs.

Evaluations in OECD countries

Finland has studied the Swedish experience with the Orange Envelope and has to date only conducted some smaller customer surveys to analyze the understandability of the information (the results showed that the participants did understand the information and found it useful).

The German pension statement was evaluated during the year of its implementation. In general, respondents reported that they understood the information: only 2 percent thought the statements was too complicated – a surprisingly low percentage for almost any type of information and even more so for information on pensions. Among those interviewed, 75 percent reported that the pension statement was important for their calculation of retirement income.

The Department for Work and Pensions in the United Kingdom has evaluated the State Pension forecast (The Automatic State Pension Forecasts discussed in this study).[18] The purpose was to analyze the impact of sending out forecasts, evaluate the understanding of the State Pension system and retirement planning and to collect participants' views of the statement.

The results showed that engagement with the pension forecast, as measured by recall and readership levels, was poor. Only one-third of respondents remembered the statement unprompted. Those most likely to recall or read the statement were those who were more likely to have pension provision beyond the State pension as well as those with higher levels of self-reported knowledge. However, views on and perceptions of the statement were generally positive among those who engaged with it. Three-quarters of those who at least glanced at the letter found it useful (equivalent to 38 percent of all recipients). Most respondents who could recall receiving it (49 percent of all recipients) reported that it had improved their understanding of pensions.

The analysis in the United Kingdom found no significant differences in actual pensions knowledge or retirement planning actions (including increasing savings) taken between the statement and control samples, implying that the statement had little or no impact on knowledge of the State Pension system or likelihood to take action to plan and save for retirement. Further analysis showed that although readership of the statement seemed to have some (secondary) influence on actual pension knowledge; it was not one of the key factors associated either with actual knowledge or with taking retirement planning action(s). The main factors associated with actions taken were self-reported knowledge of pension issues and the incidence of private pension provision, while self-reported pension knowledge and age were the primary factors associated with most areas of actual knowledge examined.

Canada has conducted mail surveys to evaluate their pension information. According to the survey, the mailing has been well received by participants. A recent evaluation (2006) showed that approximately 70 percent or participants read and filed their statements. The documents received high marks in terms of clarity and importance. In addition, 36 percent visited the Service Canada Website.

Australia undertakes frequent and wide-ranging research concerning the usefulness and clarity of Centrelink publications. Research is conducted with focus groups and in-depth interviews and the feedback is used to guide further product development.

In Mexico, in connection with a pension information campaign, pension information was evaluated for the first time in 2007. The survey asked about how the information was perceived and measured knowledge of the pension system. Among respondents, 80 percent declared that they had received their statement; 73 percent reported that they always review their statement, while 22 percent said they sometimes do. Knowledge about the pension system varies, for example only 28 percent of respondents knew about rate of return.

Conclusions

The analysis in this paper has shown:

- Personal pension statements are being introduced across OECD countries to provide information on pension benefits. Personal statements are often introduced in connection with pension reform and are regarded as an important tool in communication about the new pension system. In some cases, the information carrier – being the most tangible part of the abstract product/service – has become a symbol for pension systems.

- Statements are typically mailed to participants annually; most countries also provide additional information on their websites. In particular, the web sites give participants the option to do their own projections and receive additional information about the pension system.

- The information goals are similar across countries: to provide information on contributions to the system and expected benefits. An important information objective is to trigger participants to think about retirement, consider how their life choices affect benefits and make informed choices about them, and especially if additional savings are required to reach an adequate retirement income level.

- Most pension statements include information on contributions and some countries provide information on participants' earning records. The Orange Envelope provides detailed information on individual accounts much like a bank account. This increases the transparency of the pension system.

- The projection of benefits and how expected benefits vary with retirement age is one of the most important sections of the personal pension statement in order to plan for retirement. In the Orange Envelope this information is provided on page one. Some countries only provide projections for participants approaching retirement. By definition, the projection is uncertain for young individuals; however it provides useful information for thinking and planning for retirement. The risk of only providing projections for individuals close to retirement is the information needed to make savings decisions comes too late.

- In Germany and the United States, the pension statement is used to provide system-level information about the financial status of the pension system. The U.S. statement warns participants that benefit cuts or tax increases are necessary and that such changes will affect retirement income.

- Several countries have evaluated their pension information. However, additional research is needed to show the effectiveness of pension information. The design of the current studies does not allow for conclusions about causal effects.

- Both the usefulness and "understandability" of pension statements from public schemes is significantly reduced in countries where workers receive pension benefits from several sources. This fact does not imply that we find such information irrelevant.

- Internet services promise to be the most important tool to providing more comprehensive, individualised and thus relevant pension information services in the future. The development of such services is a difficult endeavor. They involve public, private and often social partners and are often both legally and technically challenging.

Best practices

Principles

How much income workers will have in retirement depends on a range of decisions – from how much to work and save to when to retire. Pension information should contribute to participants' knowledge so that they can make sound decisions about retirement, savings, and portfolio allocation.

Pension information should trigger participants to think about retirement, consider how their life choices affect benefits and make informed choices as to whether additional savings are required for an adequate retirement income.

Pension information should contribute to the transparency of pension systems. Pension information plays an important role in connection with pension reform.

Retirement income in general comes from several sources. Participants need information on the sum of all plans. Pension providers should therefore be encouraged to provide pension information in a similar way. Providers should also be encouraged to collaborate in providing information through a common channel, for example a website.

Good practice

1. Pension information should be sent to all participants when they start contributing to the scheme. Individual statements should be provided to all participants annually. The annual statement should be complemented by online services in order for participants to collect additional information. This information should provide tools to evaluate the level of income needed in retirement.
2. The design and presentation of the information in the annual statement should be carefully considered. Using color or a certain design can create a brand name (*e.g.* the Orange Envelope) that can help create attention around pension information and make it easier to reach participants.
3. The pension statement should provide information on pension rights. In a defined contribution plan this means contributions and earned pension credits to date, in a defined benefit plan covered earnings. In the case of defined contribution plans, account information detailing the various components (*i.e.*, contributions, rate of return, costs, etc.) provides transparency.
4. The annual statement should include summary information on investment outcomes in funded individual accounts. Information on rate of return, administrative fees and money management fees should be provided. Detailed information on how to make investment decisions should not be presented in annual statement but in accompanying materials or on a website.
5. Information should include expected benefits and how they vary with retirement age. The statement should provide information on how to interpret the projection. If several scenarios are presented, they need to

be distinguished and clearly explained. The statement also should include information on the uncertainty in the projection. Online tools to make additional projections and vary assumptions on income growth, fund growth, and retirement age should be available.

6. Information content should be segmented by age group. In particular, projections of pension benefits should only be provided to participants who are established on the labor market. However, only providing projections to participants approaching retirement does not give adequate information to make savings decisions.

7. Information should be targeted to certain life events. In many pension schemes benefits depend on life events such as marriage, having children, becoming a widow/widower. Pension information should target events that are particularly important for benefits. If the pension scheme provides pension credits for parents with young children, specific information should be provided for individuals about to have children. Information should be targeted to individuals approaching retirement. Participants who do not apply for benefits by a certain age should receive a letter inviting them to apply for benefits.

8. The statement should encourage participants to consider all retirement income and seek information on other pension plans and should provide information on where to find such information. Preferably, information on total retirement income (public, occupational and private plans) should be available from the same source.

9. Information on other benefits closely related to the old-age benefits, *i.e.*, survivor and disability benefits, should be presented in the statement.

10. The pension statement should include important system-level information; for example if benefits are likely to change in the future because of financial deficits. In such cases where benefit cuts or tax increases are necessary, the statement should warn participants that such changes will affect retirement income.

11. The effectiveness of the pension statement to provide information about pension benefits should be evaluated continuously. A plan for evaluation should be a part of information campaigns.

Notes

1 From Tor Nörretranders *Mærk verden* (1991), Gyldendal. Who cites Guinness book of records (1989) for the record short correspondence.

2 Settergren & Mikula (2005).

3 See for example Mitchell (1988), Gustman and Steinmeier (2004) and Lusardi and Mitchell (2007b).

4 Ameriks, Caplin and Leahy (2002) and Lusardi and Mitchell (2006; 2007a).

5 Ameriks, Caplin and Leahy (2002) and Lusardi and Mitchell (2006; 2007a).

6 Gustman and Steinmeier (2001) and Chan and Huff Stevens (forthcoming).

7 See for example Munnell and Sundén (2004) and Beshears *et al.* (2006).

8 In the United States the replacement rate for an average worker retiring at age 65 is projected to decrease from 41 percent in 2000 to 36 percent in 2030.

9 Participants often face a large number of investment options in defined contribution plans. In the Swedish PPM system, participants have more than 500 funds to choose from. In the United States, workers in large 401(k) plans on average have 38 different investment options.

10 For an overview of the Swedish pension reform, see Sundén (2006).

11 The questionnaire is presented in Appendix 2.

12 Quote commonly attributed to Albert Einstein.

13 Ingrid Kindahl, article for the Swedish Pension System Annual Report 2007.

14 Ingrid Kindahl, article for the Swedish Pension System Annual Report 2007.

15 A history of contributions were provided in the first Orange Envelope.

16 Retirement age for women will be gradually increased to age 65 between 2010-2020.

17 March, 2008.

18 Bunt and Barlow (2007).

References

Bunt and Barlow 2007. Evaluation of Automatic State Pension Forecasts. Department of Work and Pensions

Ameriks, John, Andrew Caplin, and John Leahy. 2002. "Wealth Accumulation and the Propensity to Plan." *Quarterly Journal of Economics* 68: 1007–1047.

Beshears, John, James J. Choi, David Laibson, and Brigitte Madrian. 2006. "Simplification and Saving." NBER Working Paper 12659, National Bureau of Economic Research, Cambridge, MA.

Chan, Sewin, and Ann Huff Stevens. Forthcoming. "What You Don't Know Can't Help You: Pension Knowledge and Retirement Decision Making," *Review of Economics and Statistics*.

Gustman, Alan L., and Thomas L. Steinmeier. 2001. "Imperfect Knowledge, Retirement, and Saving," NBER Working Paper 8406, National Bureau of Economic Research, Cambridge, MA.

------. 2004. "What People Don't Know About Their Pensions and Social Security: An Analysis Using Linked Data From the Health and Retirement Study." In *Public Policies and Private Pensions*, ed. W. Gale, J. Shoven, and M. Warshawsky, 57–119. Washington, DC: Brookings Institution.

Iygengar, Sheena, and Mark Lepper. 2000. "When Choice Is Demotivating: Can One Desire Too Much of A Good Thing?" *Journal of Personality and Social Psychology* 76: 995–1006.

Lusardi, Annamaria, and Olivia S. Mitchell. 2006. "Financial Literacy and Planning: Implications for Retirement Wellbeing." Pension Research Council Working Paper 2006-01, the Wharton School, University of Pennsylvania.

------. 2007a. "Baby Boomer Retirement Security: The Roles of Planning, Financial Literacy, and Housing Wealth" *Journal of Monetary Economics* 54: 205–224.

------. 2007b. "Financial Literacy and Retirement Preparedness: Evidence and Implications for Financial Education Programs." *Business Economics* 42(1): 34–44.

Mastrobuoni, Giovanni. 2006. "Do Better-Informed Workers Make Better Retirement Choices? A Test Based on the Social Security Statement." Working paper, Collegio Carlo Alberto, Turin, Italy.

Mitchell, Olivia. 1988. "Worker Knowledge of Pension Provisions." *Journal of Labor Economics* 6(1): 28–39.

Munnell, Alicia H., and Annika Sunden. 2004. *Coming Up Short: The Challenge of 401(k) Plans*. Washington, DC: Brookings Institution Press.

Palme, Mårten, Annika Sundén, and Paul Söderlind. 2007. "How Do Individual Accounts Work in the Swedish Pension System." *The Journal of the European Economic Association* 5(2-3): 636–646.

Premium Pension Agency. 2006. Annual Report. Stockholm.

Settergren, O. and Mikula, B. D. 2005. "The rate of return of pay-as-you-go pension systems: A more exact consumption-loan model of interest", *Journal of Pension Economics and Finance*, Cambridge University Press, vol. 4(02), pages 115-138, July.

Smith Barbara and Fiona Stewart. 2007. Learning from Experience of OECD Countries: Lessons for Policy, Programs, and Evaluations.

Sundén, Annika. 2006. "The Swedish Experience with Pension Reform." *Oxford Review of Economic Policy* 22(1): 133–148.

van Rooij, Maarten, Clemens Kool, and Henriette Prast. 2007. "Risk-return Preferences in the Pension Domain: Are People Able to Choose?" *Journal of Public Economics* 91(3–4): 701–722.

Appendix 1.

The Orange Envelope

The Social Insurance Agency and
the Premium Pension Authority

Matti Mäkinen
Vägen 21
SE-453 21 Landsorten

'06

Estimate of your public pension

This is an estimate of what you will receive in public pension. The estimate is based on the SEK 918 457 you have earned toward your public pension (see your pension account, page 2), plus your annual income until you retire. The calculations assume that you will have the same pension-qualifying income as year 2004, that is SEK 239 900 (see Decision, page 4).

Age at retirement	0 % growth	2 % growth
61	SEK 9300 per month	SEK 14600 per month
65	SEK 11900 per month	SEK 20200 per month
70	SEK 16700 per month	SEK 31300 per month

Your public pension at age 65 and 0 percent growth (SEK 11900 per month) consists of:
SEK 9600 inkomstpension and SEK 2300 premiepension before taxes.

You can receive pension from several sources

Occupational pension from your employer is not shown here. At *www.minpension.se* you can obtain an estimate that also includes occupational pension.

A growth of 0 percent means you can compare the amount in the estimate with your income today. The change in value of the premiepension funds is assumed to be 3.5 percent annually.

A growth of 2 percent means that salaries in Sweden, including your own, are assumed to grow by 2 percent each year. The change in value of the premiepension funds is here assumed to be 5.5 percent annually.

Matti Mäkinen
Vägen 21
SE-453 21 Landsorten

Your pension accounts

Changes in your accounts during 2005 in SEK	Inkomstpension	Premiepension
Value 31 December 2004	786 184	48,863
Pension credit for 2004	+ 45 504	+ 7110
Survivor bonus	+ 398	+ 28
Discount on fund fees.	-	+ 34
Administration costs	- 435	- 110
Change in value	+ 22 768	+ 8113 *
Value 31 December 2005	854 419	64038

* Change in value of funds and interest on pension credit for 2004 are included in this amount.

	Your public pension
Total balance for your accounts:	SEK 918 457 kr

Changes in your accounts since the beginning

Since 1985, you have earned SEK 626 417 in pension credit toward your inkomstpension. The amount has increased by SEK 228 002 and the current value is SEK 854 419.

Since 1995, you have earned SEK 52 878 in pension credit toward your premiepension. The amount has increased by SEK 11 160 and the current value is SEK 64 038.

'06

Matti Mäkinen
Vägen 21
SE-453 21 Landsorten

Your premiepension funds 31 December 2005

Fund name	Distribution chosen (percent)	Current distribution (percent)	Fund shares (number)	Price per share (SEK)	Value (SEK)
Premievalsfonden	20	19	131,23	83,23	10 923
Aktiespararna Topp Sverige	20	20	1 379,83	8,37	11 549
SPP Generation 60-tal	20	20	39,39	281,85	11 101
Folksams Obligationsfond	20	23	82,34	152,35	12 545
SEB Generationsfond 60-tal	20	18	1 446,43	7,22	10 441
Total	100	100			56 559
Pension credit for premium pension 2004					+ 7 110
Interest on pension credit for 2004					+ 369
Value 31 December 2005					64 038

Change in value 2005

The value of your funds changed during 2005 by SEK +7 744. This amount is included in the value change of your pension account on page 2.

You can find more information about how your funds have developed on PPM's website.

New pension credit toward the premiepension is invested according to the distribution you last chose. You can change the distribution or switch funds at any time.

③

DECISION

2004-12-31

670502-1234
Matti Mäkinen
Vägen 21
SE-453 21 Landsorten

'06

Your pension credit for 2004

Your pension credit corresponds to the amount you, your employer and in some cases the government, have paid into the pension system. From your pension-qualifying income (your annual income up to SEK 317 250 after deductions for general pension contribution) and pensionable amounts, the Social Insurance Agency has decided the following:

Pension credit for inkomstpension 2004	Pension credit for premiepension 2004
SEK 45 504 kr	SEK 7 110 kr

Your new pension credit is added to what you have already earned and is shown in your pension account. The current value is shown on page 2.

The National Tax Board has determined your *pension-qualifying income* for 2004:

Income from employment	SEK 239 900 kr
Income from business	SEK 0 kr

The Social Insurance Agency has determined your *pensionable amounts* for 2004:

Child years	SEK 44 500 kr
This gives a pension basis of	SEK 284 400 kr

The provisions for this decision are found in chapters 2-4 of the Act on Income-Based Age Pension (1998:674).

If you would like this decision to be re-examined, write to the Social Insurance Agency. State which decision should be re-examined, how you would like it changed and why. Also include your name, personal identification number, address and telephone number. Remember to sign the letter. If you engage a legal representative, the legal representative may sign instead. In this case, a power of attorney should also be sent. The Social Insurance Agency must receive the letter by the 31 December 2006, or within two months of the decision if the decision was not received before 1 November 2006. The address is: Försäkringskassan, Box 9999, SE-123 45 Landsorten, Sweden.

④

What affects the size of your public pension?



Your income

You and your employer pay pension contributions for your income to the public pension system. The total amount is 18.5 percent of your pension-qualifying income. 16 percent for the inkomstpension and 2.5 percent for the premiepension. Each year, an amount equal to the pension contribution is credited for your pension.

Having small children, studying, doing military service or receiving sickness benefits also give pension credit. The pension contributions for this pension credit are paid by the government.

Your income
↓
Pension contribution
=
Pension credit



Economic growth

Your pension credit is deposited to your pension accounts, one for the inkomstpension and one for the premiepension. The value of these accounts is determined by your total pension credit and the interest they return. Interest on the inkomtpension account is determined by the development of wages in Sweden. During the year 2005, the interest rate was 2.74 percent.

The return on the premiepension account is determined by the change in value of your funds.

Survivor bonuses, the money distributed to all pension savers from the pension accounts of those who have died, also affect the value of your pension accounts.

Pension credit
+
Interest, etc.
=
Pension account



Your retirement age

The longer you work, the larger your pension. If you, for instance, work until you are age 67, you will earn more money for your pension than if you retire at the age of 65.

If you retire later, the total amount of your pension account is also distributed over a fewer number of expected years as pensioner. Your monthly pension will then be higher.

Pension account
Time as pensioner
=
Your monthly pension

Matti Mäkinen
Vägen 21
453 21 Landsorten

More information

There is more information about the public pension at *www.forsakringskassan.se*. Here you can also make your own estimates based on your thoughts about the future. You can also call the Social Insurance Agency's self-service telephone at +46 20 524 524.

www.ppm.nu has current fund information and information regarding your account. There is also a tool that gives suggestions for different fund portfolios. You can also contact PPM on their self-service number, +46 20 776 776, receive personal service on the phone number +46 771 776 776 or by letter at the address Premiepensionsmyndigheten, SE-826 86 Söderhamn, Sweden. You can switch funds either on *www.ppm.nu*, through the self-service number or on a form that can be ordered from PPM.

At *www.minpension.se* you can obtain an estimate that includes occupational pension.

⑥

Appendix 2.

Questionnaire

Individual-specific pension information

1. When and how is the information distributed?
2. How was the information channel chosen?
3. What information is included?
4. What motivated the choice of information?
5. What are the target groups; how are they chosen; is different information given to different groups?
6. Have any customer surveys been conducted regarding pension information and what are the results?
7. Is web applications provided to complement the statement?
8. Does the information include websites for personal or system-level information?
9. Any developments towards using new media for pension information, *e.g.* e-mail, YouTube, text-messages etc.?

System-level information

1. When was the current pension scheme introduced?
2. Is it a defined benefit or defined contribution scheme or a mix?
3. Who is covered?
4. Retirement age?
5. Pay-as-you-go or funded scheme?
6. Do you advertise or launch information campaigns to increase awareness about the pensions system?

Financial Education and Annuities

Jeffrey R. Brown

University of Illinois at Urbana-Champaign and
The National Bureau of Economic Research

Executive summary

Life annuities – financial products that help individuals convert a lump-sum of wealth into a guaranteed life-long income stream – have an important role to play in providing a secure source of retirement income. Because annuities provide valuable insurance against longevity risk, much of the theoretical work in economics suggests that life annuities ought to comprise a large share of the retirement portfolios of most households. Yet around the world, voluntary annuity markets remain small.

A large number of studies have attempted to reconcile the theoretical value of annuities with the low level of voluntary annuitisation. While these studies have provided a number of important insights about the functioning of annuity markets and the role of annuities in individual portfolios, the literature as a whole has yet to produce a fully robust explanation of limited demand within the paradigm of a fully-informed and fully-rational consumer.

In addition to the difficulty of fully rationalising the limited demand for annuities, research has documented low levels of financial literacy through the world. A growing body of work in "behavioural economics" is providing substantial evidence that many individuals exhibit various behavioural biases when making financial decisions. The convergence of these findings raises the natural hypothesis that financial illiteracy may have a role to play in explaining the limited demand for voluntary annuitisation.

This report provides a review of the literature on the welfare-enhancing role of annuities, the limited size of annuity markets throughout the world, and evidence on the "rational" supply-side and demand-side explanations of the limited size of annuity markets. It then describes the nascent literature that explores the role of education, financial literacy, and various behavioural factors on the demand for annuities.

This report makes several sets of policy recommendations. The first set of recommendations is focused on the need for governments and private plan sponsors to encourage, rather than discourage, retirement income security. This includes emphasizing that providing secure retirement income is of equal importance to wealth accumulation and avoiding the inadvertent discouragement of annuitisation through public policy.

A second set of recommendations focuses on general tools for promoting retirement income security. This set includes the need to focus on retirement income during individuals' working lives, a recognition of framing and other behavioural biases when developing programmes, and the consideration of designing default payout options that provide for guaranteed income.

A third set of recommendations focuses specifically on evaluating the role of financial education. This includes the need for resources to enhance our knowledge of what types of financial education are beneficial in promoting a focus on lifelong income security, and a call to focus on how these programmes influence behaviour rather than knowledge. It also recommends that the OECD take a leading role in serving as a clearinghouse of information on "best practices" in this area.

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1. Introduction

A growing body of studies from academic, private sector and government sources documents a low level of basic financial literacy across OECD member countries as well as other countries around the world. A surprisingly large fraction of consumers lack the ability to compute compound interest, are unable to explain the difference between a stock and a bond, and are unable to correctly identify whether they participate in a defined benefit (DB) or a defined contribution (DC) retirement plan. The lack of financial literacy encompasses both skill-based deficiencies (*e.g.*, the inability to do simple calculations) and knowledge-based deficiencies (*e.g.*, lack of knowledge about various financial products). While financial illiteracy is particularly problematic among individuals with lower levels of education, studies suggest a surprising degree of financial illiteracy even among more highly educated populations.

Nearly all of the research that has been undertaken on financial literacy has focused on issues that are most directly related to savings behaviour and wealth accumulation. Precious little work has focused on measuring the extent of consumer understanding of issues pertinent to wealth decumulation, or the conversion of wealth into retirement income. In particular, we have very little direct information about the extent to which the population understands the important role of longevity risk in retirement planning or the role of annuities and other products in addressing these risks. The indirect evidence, however, suggests that consumer understanding of these issues is no better – and quite possibly worse – than general studies of financial literacy would suggest.

This omission is important because wealth accumulation alone is not sufficient to ensure financial security in retirement. Consumers must also be prepared to make important decisions about how to convert assets into a stream of consumption during retirement. In short, a comprehensive retirement planning strategy requires that an individual understand how to spend, not just how to save.

The issues involved with converting wealth into consumption are quite complex. Most individuals have limited knowledge about precisely how long they will live, and this uncertainty complicates the financial planning process. If a consumer under-estimates her life expectancy, and consumes "too much, too fast," she runs the risk of a significant drop in her standard-of-living at advanced ages. Conversely, if she over-estimates her life expectancy, she foregoes the opportunity to have greater consumption throughout her retirement. In short, "longevity risk" significantly complicates an individual's financial planning problem.

In every OECD country, both public and private solutions to the longevity risk problem exist in the form of annuitised pension benefits as well as private life annuity contracts. Life annuities are financial products that insurance against the financial risk arising from uncertainty about length-of-life by exchanging a lump-sum of wealth for an income stream that is guaranteed to last for life. Within the academic literature in economics, life annuities play a central role in improving individual welfare for risk averse agents.

In sharp contrast to economic theory, however, consumers around the world do not act as if they place a high value on annuities. Voluntary annuity markets are quite small in most countries – even in those where the fraction of overall

wealth annuitised by 1st and or 2nd pillar pensions is relatively small. Survey evidence and empirical studies in several countries confirms that most individuals appear to place little value on annuities.

This paper summarises what we know about annuity markets, with an emphasis on how consumers behave with respect to insuring longevity risk and the implications of this behaviour for financial education focused on retirement security. The paper begins, in section 2, by examining the benefits that annuities provide to consumers and the central role that annuities play in the economic theory of the life-cycle consumer. Section 3 documents the limited demand for annuities in OECD countries. In section 4, the paper discusses the large academic literature discussing both supply-side and "rational" demand-side limitations to the annuity market. A key theme of this section is that while there are numerous limitations to the market, there appears to be a residual consumer aversion to annuities that is not captured by standard models. In section 5, the paper turns to a discussion of financial literacy – both generally, and in the specific context of annuity demand. This section also explores numerous behavioural biases that have been hypothesised to influence consumer behaviour in this context, and discusses the emerging evidence in these areas. The analysis is brought together in section 6 in the form of a number of policy recommendations specifically focused on the role of financial education in informing annuity choices. Section 7 concludes the paper.

This report is part of the OECD Financial Education Project[1] that was initiated in 2003 in response to OECD government concerns over the possible adverse effects of low levels of financial literacy and financial education. In recent years, the OECD has become an international leader in the area of financial education, promoting the need for financial education and helping to set standards for it. The first major study of financial education at the international level was published in 2005. That report, "Improving Financial Literacy: Analysis of Issues and Policies," identified and analyzed financial literacy surveys in OECD member countries, highlighting the economic, demographic and policy changes that make financial education increasingly important. The report also described the various financial education programmes being offered in OECD countries, provided an assessment of their effectiveness, and suggested actions for policymakers to improve financial education. In 2005, OECD governments endorsed a set of Principles and Good Practices for Financial Education and Awareness. The OECD is currently finalising work and developing a set of good practices for financial education in the context of pensions and insurance, which should be released in the first half of 2008, and conducting work on financial education and credit issues.

2. What is the appropriate role for annuities in retirement portfolios?

Over the past several decades, all OECD countries have experienced significant reductions in average mortality rates at older ages, leading to significant increases in remaining life expectancy. For example, according to the OECD (2007a, p.22), "in 2005, life expectancy at age 65 in OECD countries stood, on average, at close to 20 years for women and over 16 years for men. This represents a gain of four years for women and 3.5 years for men on average across OECD countries since 1970." Consistent with this finding, Antolin (2007) provides evidence that remaining life expectancy at age 65 has improved at a rate of approximately 1.1 years per decade.

The length of the average work-life, however, has not kept up with overall increases in life expectancy. Indeed, as noted in Table 1, for much of the period from the early 1970's to the early 1990's, most countries experienced a *decline* in labor force attachment at older ages. Over the past decade or so, many countries have seen average retirement ages rise, although they still remain well below the level of three decades ago. As a result, the combination of people longer lives and earlier retirements have led to individuals across the OECD spending substantially more years in retirement than ever before. This increases the importance of proper planning to ensure adequate retirement income.

Longer average life expectancies have not eliminated the *uncertainty* about how long one will live. For example, while an average 65 year old woman in the United States has a remaining life expectancy of approximately 20 years, there is a 7 percent chance of dying by age 70, and a 32 percent chance of surviving to age 90 or beyond, according to Social Security Administration life tables.[2] Such uncertainty significantly complicates the financial planning for individuals. If an individual new exactly how long he would live, he could simply spread out his wealth over the fixed number of years remaining. For example, if he wished to have equal consumption in every period, he could simply amortise his wealth over the remaining life expectancy in order to provide a constant real stream of income until precisely running out of money (or leaving a planned bequest) on the day he died. In the absence of such knowledge, however, an individual must balance the risk of consuming too aggressively, potentially resulting in a large consumption drop at advanced ages, against the risk of consuming too conservatively, subjecting him to a lower level of consumption than he could otherwise afford.

Life annuities are products that insure against the financial risk associated with uncertain longevity. They do so by allowing an individual to use her accumulated wealth to purchase a stream of monthly payments that will continue for as long as the individual (and possibly her spouse) is alive. Essentially, an annuity contract allows an individual to obtain more resources in states of the world in which the marginal value of additional resources is high (namely, being alive at older ages) in exchange for giving up resources in states of the world in which resources have less value to the consumer (namely, when the individual is dead). Because a large part of mortality risk is idiosyncratic, *i.e.*, uncorrelated across individuals, annuity providers can pool the mortality risk of many individuals and use the resources of early decedents to continue making payments to those who live a long time. As will be noted in section 4 below, there is some aggregate mortality risk that cannot be diversified away by risk pooling, a fact that may partly help to explain higher than actuarially fair prices of annuities. Nonetheless, the pooling of the idiosyncratic component of mortality risk provides an opportunity for insurers to pay a mortality premium to individual annuitants conditional on survival.

Another way to view the attraction of annuities is that an annuity is able to provide a higher level of sustainable lifetime consumption than is available from otherwise similar, but unannuitised, assets. To see why this is possible, consider a simple example from Brown (2007) in which an individual without a bequest motive cares only about his consumption in the current period and one period in the future. If this individual invests $1,000 in a non-annuitised asset with an 8 percent rate of return, in the next period he will be able to consume $1,080. On the other hand, if he invests $1 in an annuity, and if with probability 0.03 the individual will not survive to receive the payment next period, then the insurer

Table 1. Estimates of the average effective age of retirement for men

	1970-75	1980-85	1990-95	2000-05	Difference (2000-05 minus 1970-75)
Australia	65.8	62.6	62.3	63.7	-2.0
Austria	..	..	*0.0*	59.1	n/a
Belgium	*63.5*	60.6	58.3	59.3	-4.2
Canada	*65.4*	63.6	62.5	63.3	-2.1
Czech Republic	..	..	..	61.5	n/a
Denmark	*65.9*	65.9	62.9	64.1	-1.9
Finland	66.5	63.0	60.1	60.5	-5.9
France	..	..	59.3	58.5	n/a
Germany	..	..	..	61.7	n/a
Greece	*66.5*	*65.2*	63.2	62.4	-4.1
Hungary	*66.3*	64.0	*62.1*	58.9	-7.4
Iceland	..	71.0	70.2	68.5	n/a
Ireland	*70.3*	*66.1*	63.2	65.2	-5.1
Italy	63.9	63.3	60.5	60.4	-3.5
Japan	71.2	69.7	70.7	69.0	-2.1
Korea	66.4	66.8	70.5	70.4	4.0
Luxembourg	*61.8*	*59.8*	59.3	59.2	-2.7
Mexico	*80.5*	*78.2*	*72.8*	73.3	-7.2
Netherlands	*64.1*	60.9	61.1	60.2	-3.8
New Zealand	*66.7*	63.6	63.2	65.8	-0.9
Norway	*67.4*	67.7	65.3	63.9	-3.5
Poland	*70.3*	66.5	*63.8*	61.3	-9.0
Portugal	*71.2*	66.5	63.3	66.2	-5.0
Slovak Republic	..	..	..	59.2	n/a
Spain	*66.8*	63.5	60.8	61.1	-5.7
Sweden	66.2	64.3	62.7	65.5	-0.7
Switzerland	*70.7*	*68.3*	*67.1*	65.2	-5.5
Turkey	*78.8*	*67.4*	65.4	64.1	-14.7
United Kingdom	*67.4*	*62.8*	62.0	63.2	-4.1
United States	66.9	65.8	64.2	64.5	-2.3

Source: OECD Calculations based on the results of national labor force surveys, the European Union Labor Force Survey, and for earlier years in some countries, national censuses. Numbers in italics are considered by the OECD to be less reliable because they are derived from interpolations of census data rather than from actual labor force surveys.

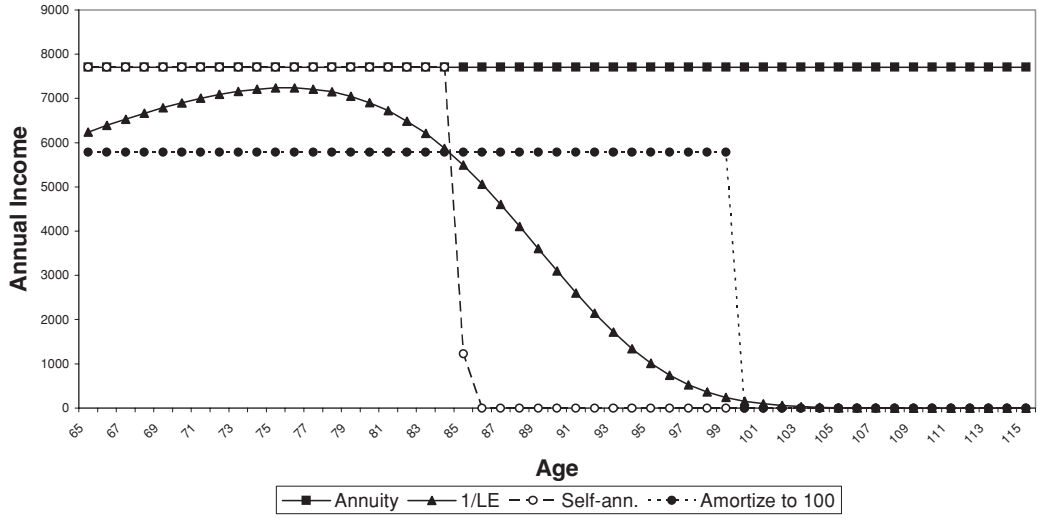
is able to pay \$1,080/(1-0.03) = \$1,102 to the annuitant, conditional on survival. The extra return provided to surviving annuitants is sometimes called the "mortality premium" or "mortality credit," because it is provided in return for giving up one's right to the wealth upon death. For an individual who does not value bequests, the fact that the rate of return on the annuity is greater than the rate of return on the non-annuitised asset for individuals who survive should lead to annuitisation.

This potential for higher returns can be seen in Figure 1, which shows the amount of income that would be available to an individual under several

alternative strategies for converting one's nest egg into retirement income.[3] The "annuity" line shows the $7,704 of annual income that would be available for life to a 65-year-old man who purchased a standard life annuity contract with an initial premium of $100,000. This strategy is then compared to three alternatives. The "self-annuitisation" alternative shows an individual who invests his $100,000 in a non-annuitised account earning the market rate of interest but who consumes the same $7,704 per year in income that the life annuity would have provided. Because this individual is not benefiting from the mortality premium, this strategy is unsustainable: he would run out of money at age 85.

The "amortisation" line shows another case in which the individual invests his wealth at the going market interest rate and "amortises" it (*i.e.*, spreads it evenly) over 35 years, from age 65 to 100.[4] This strategy provides income that is nearly 25 percent lower than that provided by the annuity. Furthermore, the amortisation strategy still imposes some risk; in the event that the individual lives beyond age 100, he would have no money left to consume under this approach, whereas he would still have income if he had purchased a life annuity. The "1 / LE," or "one divided by life expectancy," line shows what happens if an individual follows a more "sophisticated" draw-down strategy that is similar to one of the methods permitted by the IRS for meeting minimum distribution requirements from qualified pension plans. In particular, the strategy is based on consuming a fraction of remaining wealth that is proportional to the individual's remaining life expectancy.[5] The important feature of this approach is that, once again, the income stream is always lower than that provided by a life annuity. Indeed, the income from this approach never exceeds 94 percent of the annuity income level, and falls to less than 40 percent by the time a person is in his or her early 90s.

Figure 1. Income from alternative payout strategies



This insight has been formalised in a number of economic studies, starting with the seminar work of Yaari (1965). By modeling a stylised life-cycle consumer with no bequest motives and an uncertain date of death, he showed under fairly restrictive conditions that a risk-averse consumer would rationally annuitise 100 percent of her wealth. Subsequent research quantified the welfare

gains, and found them to be substantial. For example, Mitchell *et al.* (1999) found that a 65 year old male facing average U.S. population mortality risk would be willing to give up approximately one-third of his wealth in order to gain access to an actuarially fair annuity market. A recent theoretical contribution by Davidoff, Brown and Diamond (2005) refined and extended Yaari's result by presenting sufficient conditions under which full annuitisation remains optimal, conditions which are substantially less restrictive than what had been previously shown. In addition, they illustrate the central importance of "market completeness," and how the full annuitisation result may break down if some desired consumption paths are not available when all wealth is annuitised. As will be discussed in the next section, we know that annuity markets around the world are far from "complete": many private sector annuity products lack key features that would allow consumers to better match the annuity income with their desired consumption path. Even so, some economic simulations suggest that, even when the mismatch is severe, many consumers would still find it welfare-enhancing to hold the majority of their wealth in an annuitised form. Other papers find that the degree of market incompleteness may be sufficiently severe, at least in some countries, to drive the demand for annuities in the private sector to very low levels. These studies will be discussed in more detail below.

3. Annuity markets in the OECD

In every OECD country, public sector pension / Social Security systems provide significant annuitised income to most retirees. For example, the OECD (2007b, p.32) reports that "for workers at average earnings, the average for the OECD countries of the gross replacement rate from mandatory pensions is 58.7%," although there is wide variation across countries. While not all mandatory pension programmes are fully annuitised, the degree of annuitisation arising from the public sector is substantial in many countries.

In contrast, voluntary annuitisation is quite low in across OECD countries. Indeed, as noted by Lindeman and Yermo (2002), "except in a few OECD countries, annuities markets either do not yet exist or are still in an incipient stage of development." The United Kingdom is often singled out as an exception to this rule, owing to the fact that the UK has a well-developed annuity market. However, there are really two distinct private annuity markets in the United Kingdom. The compulsory market arises from the fact that participants in private defined contribution plans are required to annuitise at least part of their lump-sum by age 75. The voluntary annuity market is comprised of individuals using non-pension wealth to purchase annuities from insurers. As noted by Finkelstein and Poterba (p. 32), "the compulsory market is much larger than the voluntary market … annual payments to voluntary annuitants in 1998 were only £0.8 billion."

While the institutional structures in the United States are quite different from the U.K., the substantial difference in the degree of annuitisation across the pension and voluntary market exists in the U.S. as well. In the employer provided pension market, it used to be commonplace for pensioners in the United States to receive their defined benefit benefits in the form of an annuity. As the pension landscape in the U.S. has shifted away from DB plans and toward hybrid plans and DC plans, however, the extent of annuitisation had dropped markedly even within the pension world. Among those DB plans that

still exist, Salisbury (2002) points out that over half of them now offer a lump-sum benefit at retirement. In addition, he reports that "nearly all of the over 500" cash balance, or hybrid, plans offer lump-sum distributions as a payout option. According to Hewitt Associates, the fraction of 401(k) plans (currently the most common employer-provided plan in the U.S.) offering annuities as a payout option fell from 31 percent in 1999 to only 17 percent in 2003. As a result of these three factors, the Congressional Research Service (2005) reports that 85% of the 61.1 million workers age 21 or older who were included in a retirement plan at work participated in a plan that offered a lump-sum distribution as a payment option.

The non-group, voluntary market for individual immediate annuities in the U.S. is quite small. In 2005, only $11.8 billion flowed into individual immediate annuity contracts of all kinds (NAVA, 2006). Because this number includes products which are not life-contingent annuities (*e.g.*, products that pay out for a specified number of periods), the size of the voluntary *life* annuity market is even smaller. As discussed by Brown (2007), "the conclusion that the market is small is supported by standard household data sets that are used to track asset ownership, such as the Survey of Consumer Finances or the Health and Retirement Study. The frequency with which annuity owners appear in these data sets is so low that empirical work on private market annuity purchases in the United States has been severely limited."

Small private annuity markets are the norm in most OECD countries. MacKenzie (2006, p.27) reports that "annuities markets in France, Germany, Italy and Japan are small." In a study examining the Australian annuity market, Knox (2000) reported that "the market for private life annuities with longevity insurance is very small." A recent IMF (2007) study of the pension annuity market in Mexico in the decade following the 1997 pension reform reports that "the pension annuity market in Mexico is very small. This is due to the fact that the pension reform that created it was conducted only in 1997 and because the Mexican insurance market in general has low penetration and density." A study of annuity markets across the OECD comes to the general conclusion that there is an "apparent paradox in the findings: despite good value for consumers, demand for annuities remains weak" (Lindeman and Yermo, 2002). A discussion of the possible reasons for the limited market size is provided in sections 4 and 5.

4. Why are annuity markets small? A review of the "rational" economics literature

The international evidence on the small size of markets for voluntary annuitisation is extremely robust. What the evidence on market size does not indicate, however, is *why* so few annuity market transactions take place. In the broadest possible terms, there are two potential explanations for the small size of the market: either supply is limited or demand is weak (or both). On the supply side, markets may be limited due to high prices, arising from loads, adverse selection or aggregate mortality risk. Markets may also be incomplete, failing to provide products with inflation protection, equity market exposure, or the ability to access equity market returns. Markets may also be incomplete in the sense of providing too little liquidity.

On the demand side, there are several "rational" reasons that demand may be limited, over and above the effect of supply-side limitations. For example, individuals may already be sufficiently, or even excessively, annuitised by compulsory annuitisation of first or second pillar pensions. Alternatively, individuals may simply not value formal annuity markets due to having strong bequest motives or because informal, family substitutes for formal annuity markets exist. In addition, there is a large number of "behavioural" factors that may limit demand, a subject that will be explored in more detail in section 5 below.

Understanding what drives the limited annuity market size is critical for evaluating whether policies to promote annuitisation are desirable and, if so, which types of policies are likely to be most effective. For example, if research were to indicate that individuals have a strong latent demand for appropriately designed and priced annuity products, and that the small size of the market was due to supply constraints, then the appropriate focus of policy discussions might be to remove regulatory or other barriers to product innovation. Alternatively, if research suggests that the lack of demand for annuity products is perfectly rational because individuals are adequately protected from longevity risk due to formal and informal risk sharing mechanisms, then the appropriate policy response might be to do nothing. If, however, research suggests that the small market is driven by limited consumer demand, and that this limited demand is based on behavioural biases rather than fully rational reasons, the public policy may be most usefully focused on policies that educate consumers to overcome these biases (*e.g.*, financial education programmes), utilise behavioural biases to "guide" consumers into annuity products (*e.g.*, the use of default options), or even force individuals to annuitise through compulsory programmes. It is quite possible, of course, that annuity markets around the world suffer from limitations from multiple sources, thus requiring a multi-faceted policy response if annuity markets are to grow in the future.

Section 4.1 explores potential supply-side limitations to annuity markets, while section 4.2 explores potential demand-side explanations that fit within a strictly rational framework. Demand-side limitations stemming from behavioural biases will be discussed in section 5.[6]

4.1 *Supply-side limitations to annuity markets*

4.1.1 High prices: administrative costs, adverse selection and aggregate risk

Yaari's (1965) seminal contribution on the theory of the life-cycle consumer with an uncertain date of death showed that under fairly restrictive assumptions, consumers should rationally annuitise all of their wealth. Among the many assumptions leading to this result was that annuities are actuarially fair, meaning that the expected present discounted value of the payments from the annuity was equal to the amount of wealth used to purchase the annuity.

In practice, it is well-known that prices in voluntary annuity markets deviate significantly from actuarially fair levels, especially when the expected values are calculated using life tables representative of the mortality experience of the general population. One commonly used measure for analyzing the extent of the

divergence of actual prices from actuarially fair levels is the "money's worth" (MW) measure, which is defined as:

$$Money's\ Worth = \frac{Expected\ \ Net\ \ present\ Value\ of\ \ Payouts}{premium}$$

The numerator is the sum of all future annuity payments, weighted by the probability that an individual will be alive to receive the payment, and discounted back to present at a suitably chosen interest rate. The denominator is the cost of the annuity (*i.e.*, the "premium" paid for it). When the MW ratio is equal to 1.0, the annuity price is "actuarially fair." When the MW ratio is less than 1.0, it indicates that annuitants will, on average, pay more for the annuity than they will receive back in (the present value of) future payments.

Over the past decade, a large number of studies have computed Money's Worth ratios for private annuity markets in a long list of countries, including Australia, Canada, Chile, India, Israel, Singapore, Switzerland, U.K., U.S., and numerous others. While there is a fair amount of variation in Money's Worth ratios around the world (owing to differences in pricing, mortality tables used and discount rate assumptions), the most general finding is that MW ratios tend to be significantly less than 1.0 in most countries most of the time. For example, studies in the U.S. have shown that MW ratios tend to be in the 0.85 – 0.90 range for 65-year olds when evaluated using mortality rates for the general population and discounted using a yield curve on U.S. Treasuries (Brown, Mitchell and Poterba, 2002).

There are three primary reasons that prices may be higher than actuarially fair levels. First, private annuity providers are not providing these products as a public service. Like any for-profit organisation, insurance companies must cover their expenses (including selling expenses, underwriting expenses, etc) and earn a reasonable market return on their capital.

Second, there is considerable evidence that annuity markets are subject to the forces of adverse selection. By computing the MW separately using general population and annuitant mortality tables, studies show that much of the deviation from actuarially fair price levels arises from the fact that the mortality rates of annuitants are substantially below those of the general population. These mortality differences reflect both asymmetric information about private health information and expected longevity (*i.e.*, "active" selection) and differences in other characteristics, such as wealth and income, that are also correlated with mortality (*i.e.*, "passive" selection") (Finkelstein and Poterba, 2002). Additional evidence that active selection is likely to occur in annuity markets is that individuals with poor self-reported health are less likely to express an interest in annuitising (*e.g.*, Brown 2001). Selection by mortality differences is also known to occur across annuity products, with longer-lived individuals being more likely to choose annuity products that "back-load" annuity payments (Finkelstein and Poterba, 2004).

A third potential reason that annuity prices may exceed actuarially fair levels is that insurance companies who provide the annuities may demand a risk premium due to exposure to aggregate, non-diversifiable mortality risk. Unlike idiosyncratic individual mortality risk that an insurance company can diversify by insuring multiple lives, some mortality changes are correlated across the population. For example, the "risk" of an unexpected drop in mortality rates at older ages due to a medical break-through is not a risk that an

insurance company can diversify away simply by selling more annuities. Antolin (2007) shows how historical life expectancy projections in several countries, when compared to realised improvements in life expectancies, understated the degree of mortality reduction.

While there are other ways that an insurance company can partially hedge this risk (*e.g.*, by selling life insurance, for which the financial impact of an unexpected decline in mortality is opposite that of the impact on annuities), it is generally well-accepted that there are limits on a company's ability to perfectly hedge this risk. There is less consensus on the potential magnitude of the price effect imposed by the inability to perfectly hedge aggregate risk. For example, Antolin (2007) estimate that difficulties hedging this risk could increase the cost of pension and life-time deferred annuities by as much as 9 percent, while Brown and Orszag (2006) argue that, given observed money's worth ratios, the upper bound on the cost of aggregate risk is lower than this, at least assuming that annuity providers are fully pricing this risk. Differing views about the relative importance of aggregate risk have led to a debate in the academic and policy literature about the relative merits of government intervention, whether through the direct issuance of mortality-linked securities or through the promotion of private capital market solutions. Readers interested in this issue can find excellent discussions in Antolin and Blommestein (2007), Blake and Burrows (2001), Blake, Cairns, and Dowd (2006), Blake, Burrows, and Orszag (2002), Brown and Orszag (2006), and Friedberg and Webb (2006), among others.

Of course, while Yaari (1965) assumed actuarially fair prices, this condition is not necessary for the result that certain consumers may wish to fully annuitise. Davidoff, Brown and Diamond (2005) show that annuities remain valuable under a much weaker condition: namely that net rate of return provided by the annuity – inclusive of the mortality premium and net of any price mark-ups from administrative or selection costs – needs to be greater than the return on the non-annuitised version of the same asset. Thus, it is not enough to know that prices deviate from actuarially fair levels. If pricing were the only limitation in annuity markets, the prices would need to deviate by such a large degree that bonds would strictly dominate annuities.

From the perspective of the market as a whole, the limited demand for annuities can only be explained by prices if the market demand for annuities is very price sensitive. Several studies suggest that aggregate demand for annuities is sensitive to prices. For example, Butler and Teppa (2007) show that in Switzerland, "a majority of the retired individuals in Swiss occupational plans choose the annuity, despite the fact that the first pillar already provides a basis annuity stream in old age." Further, they show that "the annuity price is the most important determinant of the cash-out decision." Gentry and Rothschild (2007) compare total predicted annuity demand for a "hypothetical distribution of households at market annuity prices with total predicted demand if insurance loads on annuities were one percent lower. This yielded a "load" elasticity of demand of approximately 1.25 for nominal annuities and 3 for inflation-protected annuities." These estimates are subject to a number of caveats, not the least of which is that they are based on simulated demand functions rather than empirical ones.

On the other hand, the observed levels of responsiveness to annuity prices do not seem capable of explaining the very low levels of demand that we observe in most countries. Simulation work suggests that the observed loads are not sufficient to offset the utility gains from annuitisation (*e.g.*, Mitchell *et al.*

1999). Empirically, within-country studies of the money's worth ratio show some exceptions to the general finding that Money's Worth ratios are less than 1.0, and yet we do not observe substantial annuitisation rates in the sub-groups. For example, the Butler and Teppa (2007) study of Switzerland finds that money's worth ratios are higher for women than men (and, indeed, exceed 1.0 in many cases), and yet women choose the full lump-sum payment at more than double the rate of men. In the United States, individuals are able to "purchase" additional inflation-indexed annuities at prices that are actuarially fair using population mortality rates simply by postponing the date that they claim Social Security benefits. This is because the U.S. Social Security system actuarially adjusts benefits so that delaying claiming does not result in a loss of benefits in present value. Coile *et al.* (2002), however, find that very few individuals postpone claiming.

A recent study by Brown, Casey and Mitchell (2008) finds that many near-retirement age respondents stated a preference for receiving a lump-sum in place of the annuity from Social Security, even when the lump-sum is favorably priced. This study did find some evidence of price sensitivity: a 33 percent increase in the monthly annuity payout per dollar spent on the annuity is sufficient to induce only one out of five individuals to switch their stated preference from the lump-sum to the annuity. Given that most estimates of the money's worth of annuities in the private U.S. market suggest loads in the neighborhood of 10 to 15 percent, a simplistic linear extrapolation suggests that less than 10 percent of the population would switch to an annuity if they suddenly became offered at actuarially fair prices.

Of course, actuarially unfair pricing may not simply result in consumers deciding not to purchase an annuity at all: it may also lead consumers to delay annuitisation. If prices are higher than actuarially fair levels, the Milevsky and Young (2007) show that there may be advantages to delay. For example, it may be optimal to delay annuitisation if returns on investment in the future might exceed current returns or if annuities purchased later in life are priced more favorably than those purchased earlier. Relatedly, they show that an "all-or-nothing" annuitisation decision at a single point in time is sub-optimal, and that most consumers would be better off initially annuitising a lump sum (if they do not already have this minimum level from pre-existing defined benefit pensions like Social Security) and then gradually purchasing additional life annuities over time. While this line of research is quite useful in providing guidance to financial planners about how consumers can optimise their annuitisation behaviour, it does not provide a convincing empirical explanation of why annuity markets are so small even at much older ages, when the benefits from annuitisation are more apparent.

4.1.2 Incomplete markets: lack of inflation protection

The recent theoretical contribution by Davidoff, Brown and Diamond (2005) underscores the important role played by complete markets. In particular, if markets are complete – essentially meaning that consumers have available to them a rich enough selection of annuity products to allow them to perfectly match their desired consumption plan – then Yaari's full annuitisation survives the relaxation of a large number of restrictions on preferences, sources of uncertainty, and pricing.

In reality, of course, annuity markets are far from complete in any country. One dimension upon which private annuity markets have often been criticised by economists is that the most commonly available annuity products do not index benefits for inflation. In the U.S., for example, inflation-indexed annuities essentially did not exist in the private market prior to the introduction of inflation-indexed Treasury bonds in the late 1990s.

It does not appear to be the case, however, that the lack of inflation indexation is the primary culprit of the small market size. Over the past decade in the U.S., several companies have introduced products that are fully or partially indexed to inflation, and yet the market for these products has remained very small. Evidence from the U.K. is consistent with this. Specifically, inflation-indexed products have been available in the U.K. for many years, and yet they represent a very small share of the overall annuity market (Finkelstein and Poterba, 2002). This is not altogether surprising from the perspective of the fully rational consumer model, however. Simulation work shows that while fully rational, risk-averse consumers should value inflation-indexed annuities more highly than nominal annuities, the value of nominal annuities remains high even in the presence of inflation risk (Brown, Mitchell and Poterba 2002).

The recent study by Brown, Casey and Mitchell (2008) also casts doubt on the centrality of inflation concerns as an explanation for limited annuitisation. When consumers were given a choice between an inflation-indexed annuity from the U.S. Social Security system and a lump-sum, the majority of respondents preferred the lump-sum payment.

4.1.3 Incomplete markets: lack of equity market exposure

Another potentially important form of incomplete markets is the inability in some markets to access equity returns in an annuitised form. Horneff, Maurer and Stamos (2006) derive the optimal portfolio choice in a life cycle model when households face mortality risk and capital market risk, as well as labor market risk. They allow for fixed life annuities in a realistically calibrated life-cycle allocation problem. This approach highlights the trade-off between the loss of flexibility imposed by the fixed annuity and the positive mortality premium that the annuity provides. In a stylised model that ignores pricing loads, they find that individuals will begin investing in annuities at very early ages (20) as long as they have sufficient financial wealth, and that by age 50, annuities crowd out bond investments. By age 78, they find that annuities crowd out stocks as well. Once pricing loads are introduced, annuity purchases are postponed until closer to retirement age (or beyond if the person has limited financial wealth). The key difference from prior studies on life-cycle asset allocation is that the consideration of mortality risk results in individuals gradually shifting out of stocks and into annuities rather than into bonds at older ages.

Inkmann, Lopes and Michaelides (2007) study the demand for annuities in a life cycle model in which consumers can access equity market returns only by investing in stocks because only fixed life annuities are available. They report that "households optimally choose not to buy an annuity if they realise they can have access to the stock market. The flexibility associated with investment in the stock market rather than locking into the fixed annuity payout seems to be an intuitive explanation for a number of households choosing not to buy an annuity."

As noted by Davidoff, Brown and Diamond (2005), there is no theoretical reason that equity exposure cannot be provided in an annuitised form. However, this form of market incompleteness appears to be empirically relevant in the U.K., where few annuities appear to be available that allow investors to access equity market returns in an annuity product. Using U.K. micro data, Inkmann, Lopes and Michaelides show that under reasonable (estimated) parameters about preferences, it is possible to simulate extremely low levels of demand for fixed annuities when markets are incomplete in this manner.

It is unclear whether this form of market incompleteness is a plausible explanation of limited annuity demand in the U.S. One of the leading annuity providers in the United States – TIAA-CREF – has long provided annuity products with payments that are linked to an underlying diversified portfolio. While TIAA-CREF participants, who are overwhelmingly from the education sector, have historically high rates of annuitisation, much of this was driven by employer rules that mandated or encouraged annuitisation. As these rules have loosened over the years, TIAA-CREF has seen a significant decline in annuitisation rates (although the rate remains high by most standards). Whether or not TIAA-CREF's above average rate of annuitisation today is attributable to the availability of variable payouts or due to any number of other differences between the TIAA-CREF participant population and the general population has not been firmly established.

The U.S. is also notable for having a very large market for "variable annuities." However, as noted by Brown and Poterba (2006), variable annuity products have been sold historically on the basis of providing tax advantages during the asset accumulation phase. Because very few consumers converted the balance of these plans to a life annuity at retirement, the growth in the variable annuity market in the U.S. has not traditionally been considered a useful measure of the demand for payouts that insure against longevity risk.

In the last few years, however, there has been a strong and growing demand for variable annuities that offer minimum retirement income guarantees, such as a "guaranteed minimum withdrawal benefit," or GMWB. Numerous industry sources indicate that a large and increasing fraction of contracts include such income options. For example, Prudential Financial (2006) reports that the GMWB option was available on nearly 80 percent of the variable annuities sold in the first quarter of 2006, up from 44 percent in 2003. A GMWB guarantees that the individual buying the variable annuity will be credited with at least a minimum rate of return even if equity markets decline. If the annuitant chooses a lifetime withdrawal plan, the monthly income is based on either the higher of the actual account value or the guaranteed value. Many companies provide options for the account value upon which the income withdrawal is based to "reset" at a higher level at specified intervals or at specific points in time.

Unlike a true life annuity, these products allow account balances (if any) to be left to one's heirs after death, and therefore do not pay a "mortality premium." As a result, the amount of income that is guaranteed by variable annuities with a GMWB is lower than what a fixed life annuity would provide. Nonetheless, there is a "life-annuity" aspect to these products: the products guarantee that the individual will receive the withdrawal income for life, "even if the combination of annual withdrawals … and adverse market performance deplete the account" (Herschler, 2006). Therefore, these products do provide guaranteed lifetime income, and can be viewed as serving the same purpose of a life annuity. While the growth in this market has been substantial in the U.S., it

is still too early to tell whether these products will become so popular as to essentially eliminate concerns about the annuity puzzle in the U.S.

4.1.4 Incomplete markets: illiquidity and insuring multiple shocks

A closely related form of market incompleteness that has been posited as a potential explanation for the lack of annuitisation is that fixed annuity contracts impose a substantial degree of illiquidity on annuitants. Primarily due to concerns about dynamic adverse selection, most annuity providers do not permit annuitants to substantially alter the timing of annuity payouts once they have begun. Annuitants cannot easily borrow against future annuity payments, nor can they easily reverse an annuity purchase.

Koijen, Nijman and Werker (2007) emphasize the role of illiquidity of annuities in a life-cycle model. In a model that allows for time varying interest rates, inflation and risk premia, along with mortality risk, they show that consumers optimally will allocate wealth at retirement to a mix of nominal, inflation-indexed, and variable annuities depending on the state of the economy. Among the many contributions of their paper, they show that the welfare costs of annuity market incompleteness are quite significant. Relative to an optimal annuity portfolio that provides access to all three types of annuities, the authors find that if the portfolio choice is restricted to inflation-indexed annuities, even conservative investors suffer a welfare loss of nearly 10 percent. Restricting choice to only nominal annuities results in even greater losses, ranging from 22 to 55 percent.

Concerns about liquidity also arise frequently in the economics literature in the context of health care expenditures, and long-term care in particular. Davidoff, Brown and Diamond (2005) note that if expenditures are concentrated very late in life, then annuities might be an effective way to save for such expenditures. However, if the expenditures come early in life, this risk may reduce the value of annuities because the illiquid nature of the annuity renders those resources unavailable to pay for care. Sinclair and Smetters (2004) and Turra and Mitchell (2005) analyze the effect of medical expenditure shocks on annuity demand, and find a strong negative effect.

As noted by Brown (2007), however, "forgoing annuitisation is an inferior strategy to buying both annuities *and* insurance against the shocks, such as long-term care insurance in the case of nursing homes." Murtaugh, Spillman and Warshawsky (2001) propose combining longevity insurance and long-term care insurance in a single product. Not only does such a combination product address concerns about liquidity in the face of medical expenditures, but it also has the potential benefit of improving pricing, relative to offering the two products separately, because the selection effects may be partially offsetting. Such products have only recently begun to be offered in the U.S., so it is too early to know whether they will prove popular.

Liquidity need not be limited to medical needs. At least one insurance company in the U.S. offers a fixed life annuity with an option to withdraw, on a one-time-only basis, up to 30 percent of the expected value of the remaining annuity payments based on mortality rates at the time of purchase. This option is limited to being exercised only on the fifth, tenth, or fifteenth anniversary of the first payment or upon a "significant, non-medical loss" (Warshawsky, 2007). It is not yet clear whether the potential for adverse selection in this context has affected the pricing in a significant way.

4.1.5 Risk of annuity provider default

Babbel and Merrill (2006) analyze individual annuity demand when there exists the possibility of default by the insurer that is issuing the annuities. They find that "even a little default risk can have a very large impact on annuity purchase decisions." Essentially, the risk of "losing everything" has a substantial negative impact on annuity demand for rational, risk averse consumers. However, the authors also find that "state insolvency guaranty programmes can have a big impact upon the levels of rational life annuity purchases – particularly annuities of large size. This occurs even if the guaranty limits are relatively low. Higher guaranty limits have a much smaller incremental impact on annuity purchases." In the U.S., all states have some form of state guaranty fund, with the coverage amounts ranging from $100,000 to $500,000, suggesting that the risk of insolvency cannot explain the complete lack of voluntary annuitisation among the majority of households.

4.1.6 Summary of supply-side limitations

There is no question that annuity markets in most countries are imperfect, suffering from higher than actuarially fair prices and from limited availability of some product features. Even so, it is difficult to conclude that these factors are of first-order importance in explaining limited annuitisation. The failure of consumers to show interest in annuitisation even when it is attractively priced and when new products address concerns about inflation-indexation or equity exposure suggests that "something else" is responsible for the lack of annuitisation. That "something else" must presumably be a demand-side explanation.

4.2 "Rational" demand-side limitations to annuity markets

Economists have offered no shortage of possible solutions to the annuity puzzle within a rational life-cycle framework. This section reviews and analyzes these hypotheses.

4.2.1 High levels of annuitisation from mandatory pension schemes

In standard models of a risk-averse, life cycle consumer, the marginal value of annuitisation declines as the fraction of wealth annuitised increases. Many studies (*e.g.*, Mitchell *et al.* 1999, Dushi and Webb 2004, Inkmann *et al.* 2007) have noted that high levels of annuitisation from mandatory annuitisation schemes (such as first pillar public pensions) ought to reduce the demand for annuities from the private market. There seems to be little question that this ought to be true for individuals with very high replacement rates. In some countries, however, the replacement rate from compulsory annuitisation schemes is quite low, especially as one moves up the income distribution in systems with progressive first and/or second pillar benefits.

While there is little reason to doubt that public annuity provision partially crowds out private annuity markets, this does not imply that private markets should be as small as they are. First, there is tremendous heterogeneity across countries in the extent to which individuals are subject to compulsory annuitisation, and yet we do not observe significantly larger voluntary annuity markets in countries with smaller compulsory annuitisation

systems. Second, within some countries there is a wide variation in the extent to which retirement resources are annuitised. As Hu and Scott (2007) note in the U.S. context, "it would be a miraculous coincidence if the optimal partial annuitisation strategy equaled the amounts provided by Social Security and defined benefit pensions for the vast majority of retirees."

4.2.2 Strong bequest motives

In a standard life annuity product, payments cease upon the death of the annuitant(s). Thus, if an individual wishes to leave an inheritance, she will not wish to annuitise 100 percent of her wealth. This is why the classic "full annuitisation" result assumed that there are no bequest motives (Yaari, 1965). However, as has subsequently been discussed by Davidoff *et al.* (2005), under certain assumptions, an individual should optimally divide their wealth between "consumption" and "bequests" and then fully annuitise that part of wealth that is set aside for consumption. As such, while having bequest motives nullify the full annuitisation result, the demand for annuities remains high for that part of wealth set aside for consumption. Indeed, if the individual is risk averse over the size of the bequest, then annuitisation is particularly important as it insures that the individual will not need to tap into the bequest assets to support her own consumption. As noted by Brown (2007), "in the absence of annuitisation, the size of the bequest becomes a draw from a very disperse distribution—for example, the bequest might be quite large if the individual dies young, but quite small if the individual dies at age 95."

There is very little empirical evidence supporting that strong bequest motives significantly influence annuity decisions. Using the U.S. Health and Retirement Study, Brown (2001) found that self-reported measures of the strength of the bequest motive were not correlated with stated intentions about whether one was likely to annuitise defined contribution account balances at retirement. Similarly, Johnson, Burman and Kobes (2004) found that older adults with children are equally likely to annuitise as older adults with no children. Using data from Switzerland, Butler and Teppa (2007) indirectly test for how bequest motives influence annuity demand by comparing annuitisation rates of never married women to divorced/ widowed women and find no indication for the existence of a bequest motive.

Bequest motives are sometimes suggested as the reason for the popularity of period certain guarantees among those individuals who do annuitise. These products guarantee that the annuitant and/or the policy beneficiary will receive a minimum number of payments even if the annuitant dies shortly after purchasing the annuity. Such guarantees, however, do not seem to be plausibly explained by bequest motives due to the odd distribution of bequests that results from such a contract. As discussed by Brown (2007): "Suppose, for example, that an individual purchased an annuity with a monthly payout of $1,000, and a ten-year period certain guarantee. If the annuitant dies immediately after purchasing the annuity, the beneficiary receives 120 payments of $1,000. If the annuitant dies after one year, the beneficiary receives only 108 payments of $1,000. At the end of ten years, the beneficiary receives nothing. Standard parameterisations of a bequest motive (whether a "warm glow" model or an altruistic model) have difficulty explaining why this particular distribution of bequests would be optimal. If there is any risk aversion over the size of the bequest, it is easy to show that a guarantee is dominated by purchasing a $1,000 per month annuity with no guarantee and using the savings

from the reduced annuity premium to make an immediate gift to the beneficiary. Indeed, if there were any load paid on the guarantee, even a risk-neutral recipient would prefer the immediate gift."

4.2.3 Risk sharing within families

Kotlikoff and Spivak (1981) were the first to note that when multiple individuals, such as family members, share a common budget constraint, this can serve as a partial substitute for a formal annuity market. By pooling their resources, families are able to capture a large share of the welfare gains that are obtainable from an annuity market. As a result of this risk sharing potential, Brown and Poterba (2000) show that a couple's willingness to pay for joint and survivor annuities is substantially lower than a single individual's willingness to pay for an annuity.

4.2.4 Tax treatment

The tax treatment of annuitised income relative to the tax treatment of lump-sum or phased withdrawals may also influence the demand for annuity products. For example, Yoo and de Serres (2004) provide a comprehensive discussion of the tax treatment of private pension savings in OECD countries and finds significant variation in the extent to which annuitisation is encourage or discouraged by its relative tax treatment. For example, the authors indicate that "the United Kingdom, Ireland, Spain, France, Mexico and Turkey allow a partial tax-free withdrawal of benefits in the form of a lump sum, while France, Germany and Turkey allow a similar tax privilege to annuity pension income."

It would seem that governments would have a clear interest in encouraging – or at least not discouraging – annuitised withdrawals, both because of a paternalistic concern for individual welfare and because of the potential to reduce the moral hazard concern that individuals might exhaust their personal resources too quickly and turn to publicly provided social assistance programmes for financial support. To the extent that non-annuitised withdrawals have any tax advantage over annuitised withdrawals, this fact obviously works counter to that interest.

4.2.5 Summary of demand-side explanations

It is likely the case that each of these demand-side explanations has some merit. While no single explanation is capable of explaining the extend of limited annuity demand, Dushi and Webb (2004) combine high prices, high levels of pre-existing annuities, and risk sharing within couples in one model, and use this model to simulate annuity demand for individuals in the Health and Retirement Study (HRS). They find that it is possible to generate low levels of annuitisation, suggesting that while some factors may be inadequate to explain limited annuity demand in isolation, a combination of factors may have more success. In essence, they suggest that the annuity market may suffer "death by one thousand cuts." Importantly, however, this approach to explaining the annuity puzzle has counterfactual implications of its own. For example, the Dushi and Webb paper suggests that annuity demand should be higher for single individuals than for couples, and that we should therefore observe individuals choosing to annuitise upon the death of a spouse, and yet we do not.

More generally, the heterogeneity of consumer preferences with regard to the above factors suggests that a "one size fits all" approach to product design may not appeal to many consumers. Thus, there is a tension between provide annuity products that are flexible enough to meet consumer needs (*e.g.*, different starting ages, different payout paths, the presence/absence of guarantees, etc.) with the need to keep products simple enough to avoid consumer confusion. As the next section will suggest, most consumers do not approach the retirement income decision with a high level of financial literacy, and thus may have difficulty sorting through a complex array of product characteristics.

5. Financial literacy, behavioural biases, and the demand for life annuities

5.1 *General evidence on financial literacy*

A large and growing body of evidence suggests that a large segment of the population around the world exhibits poor financial knowledge. Lusardi and Mitchell (2007a) provide a review of the evidence on financial literacy in several countries. Much of this literature shows that large fractions of individuals are unable to make simple financial calculations, such as compound interest, and have a poor understanding of basic financial products. Poor financial literacy has been documented in a wide range of countries (*e.g.*, Australia, Germany, Japan, Korea, New Zealand, U.K., and U.S.)

Prior research conducted for the OECD found that "the level of financial literacy is low in most countries, including in developed countries. In Japan, for instance, 71% of adults surveyed knew nothing about investment in equities and bonds, while surveys in the US and Korea found that high school students failed a test designed to measure students' ability to choose and manage a credit card or save for retirement. Perhaps more worryingly, consumers often overestimate how much they know" (OECD 2006).

As an example of this overconfidence, Lusardi and Mitchell (2007a) and the OECD (2006) note that an Australian survey of some 3,500 randomly chosen respondents age 18+ found that "67% of respondents said they understood compound interest, but a mere 28% were rated as having a "good level" of comprehension when faced with an actual problem to solve." Similarly, in the 2004 Health and Retirement Survey of U.S. Baby Boomers, Lusardi and Mitchell (2007a) found that even among those respondents who were able to answer a simple percentage calculation *or* a simple division problem correctly, only 18% correctly computed compound interest over two years.

There is ample evidence that the lack of financial knowledge and financial literacy is relevant to the context of retirement planning. For example, Bernheim (1998) suggests that levels of financial literacy are too low for most households to be able to make appropriate saving decisions. In recent work, Gustman, Steinmeier and Tabatabai (2007) report that only 49 – 62% of respondents (depending on the year, and the survey) identify their employer pension plan type (*i.e.*, DB or DC) consistently with what documents from the plan sponsor indicate. Lusardi and Mitchell (2007b) find that those who are more financially knowledgeable are more likely to plan for retirement, even after controlling for a number of other factors, including level of education. A survey

in Singapore found that only 24 percent of individuals had calculated how much money they would need when they retire (Tan 2006).

A much more difficult question is whether financial education programmes are effective at increasing levels of financial literacy and leading to better financial decisions. It is quite difficult to identify a causal effect of voluntary financial education programmes due to the fact that individuals who self-select into such programmes may be more financially literate to begin with. To overcome these selection problems in the context of savings programmes, Bernheim, Garrett and Maki (2002) study the how differences in *mandatory* education programmes in high school influence financial decisions and outcomes later in life. They find that self-reported savings rates are higher for students exposed to a financial education mandate than those there were not exposed to such a mandate. Consistent with this, they found that net worth was also higher among those students exposed to the financial education mandate.

The workplace is another arena in which individuals are sometimes exposed to financial education in a quasi-experimental way. Bayer, Bernheim, and Scholz (1996) provide evidence that more frequent exposure to financial education seminars increases participation in voluntary savings plans, as well as contribution levels. The increase in participation rate was strongest among lowest-wage employees. The authors acknowledge that these effects are not likely due to financial education in isolation, but rather financial education in conjunction with the opportunity and institutional infrastructure for applying the new knowledge.

While these studies, and others, suggest that financial education can be effective at increasing savings rates and participation rates in voluntary savings plans, the state of knowledge in this area remains limited in several key respects. First, we know very little about whether some types of financial education are more effective than others. Second, there has been very little done in the way of "cost-benefit analysis" of financial education programmes, an important shortcoming given that many approaches to improving financial literacy (*e.g.*, mandatory programmes) may be quite expensive. Third, most of the rigorous studies to date have focused on savings decisions: there does not appear to be any rigorous research analyzing how financial education influences retirement payout, or annuitisation, decisions.

5.2 Education, financial literacy and annuity demand

Because financial literacy influences a wide range of economic behaviours, it is natural to assume that it is likely to influence annuitisation decisions as well. However, there is very little empirical research specifically focused on how financial literacy influences the decision to annuitise.

The evidence on proxies for financial literacy is mixed. For example, in a study of two defined benefit plans, Mottola and Utkus (2007) find that "lump-sum participants have demographic characteristics typically associated with higher levels of financial experience and financial literacy; annuity participants have characteristics typically associated with lower levels of financial experience and financial literacy." They draw this conclusion on the basis of the fact that individuals choosing the lump-sum were more likely to have higher 401(k) plan balances, more likely to have higher levels of financial wealth outside of the retirement plan.

Other studies have examined the correlation between education and the receipt of annuity income. Using data from the Health and Retirement Survey in the U.S., Johnson, Burman and Kobes (2004) report "the receipt of annuity payments by the elderly from sources other than Social Security increased with education." Because more highly educated individuals have greater access to private pensions in the U.S., however, such a finding is not particularly surprising.

A few studies have attempted to study whether level of education affects the demand for annuities, conditional on having resources to annuitise. For example, Brown (2001) studies individuals' stated intentions about whether or not they plan to annuitise their balances in their defined contribution accounts. After controlling for "annuity equivalent wealth," a utility-based measure of annuity valuation, he finds that education is *not* significantly correlated with planned annuity decisions.

Of course, even if education is correlated with annuity choice, this does not necessarily mean that it is being driven by financial literacy. As pointed out by Lusardi and Mitchell (2007b), level of education and the degree of financial literacy are not perfectly correlated. For example, while individuals with at least a college education are twice as likely to be able to answer a compound interest question as are individuals with only some college (and about six times as likely to answer correctly than someone with only a high school education), it is still the case that only 30 percent of college educated individuals answered the question correctly.

Two very recent studies have attempted to specifically measure the effect of financial literacy, rather than overall education level, on annuity demand. Agnew *et al.* (2008) recruited 845 individuals across a broad age range (19-89) and conducted a series of experiments about annuity choice. As part of the experiment, individuals took a financial literacy quiz that "tested basic financial concepts such as understanding the importance of saving early, specifics about financial instruments and more advanced topics like the definition of beta. The quiz was designed to achieve a wide distribution of scores in order to separate individuals into high literacy and low literacy groups." Subjects were given $60 to either purchase an annuity or invest in a self-chosen portfolio composed of a risk-free asset and a simulated market. If participants chose the annuity, they received $16.77 for every round they "survived" the game. In this experimental setting, the authors find that, conditional on education, individuals in the high financial literacy group are significantly *less* likely to choose annuities. The authors hypothesise that this may be driven by "familiarity with investment vehicles proxied for by high literacy scores or by overconfidence in the ability to invest."

In a second study, Brown, Casey and Mitchell (2008) find that more highly educated individuals are *less* likely to annuitise, but that conditional on education, more financially literate individuals are *more* likely to choose an annuity. Specifically, they fielded an experimental module in the Health and Retirement Survey, asking the following question to respondents:

> *Imagine you are 65 years old, and you are receiving $1000 per month in Social Security benefits. Suppose you were given the choice to lower that benefit by half, to $500 per month. This one-half benefit reduction will continue as long as you live. In return, you would be given a one-time, lump sum payment of $87,000.*

Would you take the $1000 monthly benefit for life or the lower monthly benefit with the lump sum payment?[7]

Respondents were then asked a follow-up question that either increased or decreased the lump-sum amount. Many respondents stated a preference for the lump-sum payment at the initial price, and most of those individuals still chose the lump-sum even when the lump-sum was decreased by 25 percent. The authors find that persons with higher (16+ years) of education are less likely to choose the annuity. Conditional on education, however, there seems to be some evidence that more financially sophisticated individuals are more likely to choose the annuity.

These results raise a number of interesting questions. A natural temptation among annuities scholars – who are inclined to believe that life annuities are a sensible product to include in any retirement consumption plan – is to assume that more financially literate individuals will be more likely to annuitise. But as implicitly noted by Agnew *et al.* (2008), some types of financial education may simply serve to make investors over-confident in their investment skills, perhaps leading them to believe that they can "do better" than an annuity by investing on their own.

Ultimately, it is an empirical question whether or not financial education makes individuals more or less likely to annuitise. It is quite likely that the answer will depend on the type of financial education made available. As we will see in the next section, there is some evidence that consumers are significantly more interested in annuities when presented in a consumption frame rather than as an investment product. If so, it may be that financial education that is focused primarily on "how to invest" could make individuals less likely to annuitise, while financial education focused on "how to provide secure retirement income" could make people more likely to annuitise. Currently, these questions are under-researched and poorly understood.

5.3 *Framing*

In a variety of experimental settings, psychologists have found that individuals make decisions not based solely on material consequences, but rather interpret the consequences through a particular "frame." A recent paper by Brown *et al.* (2008) suggests that individuals might be easily influenced by how the features of annuities, in comparison with alternative investments, are framed. In the standard, fully rational model, individuals are assumed to be making lifelong decisions about how to best allocate resources to equate the marginal value of consumption in every period of life. In this setting, the authors note that "annuities provide valuable insurance by transferring resources from states where resources have no value (death) to states where resources provide utility through consumption." The authors then propose that "instead of viewing the problem through the *consumption frame* (focusing on the end result of what can be spent over time), many consumers adopt an *investment frame* (focusing on the intermediate results of return and risk features when choosing assets and not considering the consequences for consumption) … Consumers effectively isolate one choice (how to invest) from others (how to consume) and focus on specific features of this choice rather than viewing it as part of a broader, integrated set of choices." In an investment frame context, the authors note that an annuity appears *riskier* than alternative investments, because the expected return depends on an uncertain date of death. This

distinction is the key insight of their hypothesis, namely, "under the consumption frame, the annuity is attractive because it serves as a form of insurance. In contrast, under the narrow investment frame, the annuity is viewed as being riskier than a bond because its return depends on a random variable". The authors further note that this framework matches the intuition provided by many industry participants that people react negatively to the fact that they could "lose money" if they were to die shortly after purchasing an annuity.

To test this hypothesis, the authors conducted an Internet survey of just over 1300 individuals. Participants were asked to rate the product choices made by hypothetical individuals, a choice set that included 2-way comparisons between life annuities and alternative investment products such as savings accounts. As described by the authors, "the essence of the test is that some of the subjects are presented these products in an investment frame, which emphasized the depersonalised return on an account by using words such as "invest" and "earnings," describing periods in terms of years, mentioning the value of the initial investment ($100,000 in every case), and alluding to the account value at other points in the description. The other subjects are presented these products in a consumption frame, meaning that they are told how much each product would ultimately allow its purchaser to consume and for how long, using words such as "spend" and "payment," describing periods in terms of the purchaser's age, and never alluding to an account or its value."

The authors report that "when questions were presented in the consumption frame, the majority of individuals preferred the consumption stream consistent with a life annuity to the consumption streams available from other products of comparable actuarial value. Specifically, in this frame, when individuals were told that any payments after death went to charity, 72 percent of respondents preferred the $650 per month that could be provided by a life annuity to the consumption stream from a savings account of comparable actuarial value … in contrast, when individuals faced the same choices in the investment frame, the proportions reversed, with the majority of individuals *not* choosing the life annuity. Specifically, only 21 percent of respondents preferred an account earning $650 each month for life (*i.e.*, a life annuity) to investing $100,000 at four percent."

The authors also varied the extent to which bequest motives might interact with framing. Specifically, half the respondents were told that remaining resources would go to charity (a weak bequest frame), while half the respondents were told that remaining resources would go to children (a strong bequest frame.) While the ability to leave non-annuitised money to children did reduce the demand for annuities in both the investment and the consumption frame, the roughly 50 point difference in the fraction of the people who preferred the annuity in the consumption frame versus the investment frame remained largely unchanged. The authors also found that demographic characteristics (*e.g.*, number of children, marital status, gender, etc.) influenced levels of annuity demand, but had virtually no effect on the strength of the framing effect.

The experiments conducted by Agnew *et al.* (2008), and described above, also explored the effect of framing. In these experiments, they showed participants a five-minute slide show that included one of three "manipulated conditions." In one set, the slide show highlighted the negative features of the investment option and showed ho the annuity could solve the problems that the investment

alternative created. In the second set, the slide show highlighted the negative aspects of the annuity, and showed how the investment alternative could solve the problems created by the annuity. A third set attempted to present the options in a neutral, unbiased manner.

The authors report that the biased presentations had large and significant effects on choices, and, interestingly, that the effects differed by gender. "When compared to subjects in the neutral treatment, women and men are significantly less likely to choose the annuity when presented with information negatively framing the annuity option, while *only* men are significantly more likely to choose the annuity option when presented with information negatively framing the investment option." (Agnew *et al.* 2008).

If changing the way annuities are framed has potentially large effects on how consumers perceive annuities, then this casts doubt on the notion that individuals are making fully-informed, fully rational decisions about whether or not to purchase annuities.

5.4 *Annuities and default options*

The idea that consumers may not be making fully informed or fully rational decisions about annuitisation also receives some support from the literature on default options. As noted by Beshears *et al.* (2007), default options have been shown to influence wide range of behaviours related to retirement planning, including decisions on whether to contribute to a savings plan, how much to contribute, and how to allocate one's portfolio. They discuss a number of possible reasons that default options may have such a strong effect on behaviour. These include: (1) it may be too complex to do the analysis required to evaluate the non-default options, (2) individuals may be "present-biased" and never get around to switching the election, and (3) individuals may view the choice of the default option as providing an implicit endorsement that the default is the most appropriate option.

With regard to annuities, Beshears *et al.* (2007) discuss an important change in the regulations about annuitisation options with defined benefit plans in the U.S. The Employee Retirement Income Security Act (ERISA) of 1974 required that the default annuity option from DB plans be a joint-and-one-half survivor annuity, unless the individual opted out of this by choosing a single life annuity with higher monthly benefits. In 1984, the regulations were amended to require an annuitant to obtain a notarised signature of his or her spouse in order to opt-out of the joint-and-survivor annuity requirement. Holden and Nicholson (1998) show that before 1974, less than half of married men chose a joint-and-survivor annuity. Following the passage of ERISA in 1974, use of the joint-and-survivor annuity rose by roughly 25 percentage points. Aura (2001) reports that the adoption of the spousal consent regulations in 1984 further increased the use of joint and survivor options by up to ten percentage points.

Butler and Teppa (2007) provide evidence that is strongly suggestive of the importance of default options on annuity choice in Switzerland. They examine the annuitisation decisions of over 4,500 individuals in ten company pension plans. In nine of the ten companies, the annuity is the default payout option (with a partial or full lump-sum as alternative options). The remaining company "provides a lump sum payment (amounting to the last working year's salary) as the standard option." Annuitisation rates are quite high in these plans overall: in 8 of the 10 plans, annuitisation rates exceed 50 percent. In the one company

that does not use the annuity as the default option, the annuitisation rate is only 10 percent.

A recent study by Mottola and Utkus (2007) that studies the lump-sum versus annuity decision of two large U.S. defined benefit plans questions the importance of the default option. Among participants in the traditional defined benefit plan, they find that only 25 percent of married individuals choose the annuity, versus 36 percent of single individuals. While this difference is consistent with the family risk-sharing hypothesis outlined in the prior section, it is nonetheless somewhat surprising given that married individuals must have their spouse waive the right to a joint-and-survivor annuity via a notarised, written document. The authors conclude that "when it comes to accessing their money at retirement, married participants are actively engaged decision-makers … Married participants work actively to 'deannuitise' – to overcome the federally mandated default option of a joint-and-survivor annuity and choose a lump sum instead."

5.5 *Pessimistic beliefs about longevity*

Sheshinski (2008) points out that most studies of annuity demand assume that "individuals, when forming their consumption and retirement plans, have correct expectations about their survival probabilities at all ages." He formally models a fully rational individual who deviates from standard life-cycle models only insofar as having beliefs about survival probabilities that are more pessimistic than what we actually observe. Because survival probabilities serve a role similar to that of a discount rate, individuals with pessimistic mortality will wish to shift consumption to earlier ages. He suggests that this "may provide one explanation of the observed small demand for annuities by young cohorts."

It is not clear that this factor is empirically important, however. A number of empirical studies have examined how subjective survival probabilities compare to observed mortality rates in the population. In one of the first papers to explore the relation between subjective and objective mortality rates, Hurd and McGarry (1993) used panel date from the Health and Retirement study and found that (i) respondents modify their survival probabilities in sensible directions when new information (*e.g.*, the onset of disease or death of a parent) arrives, and (ii) that subjective survival probabilities have predictive power for estimating survival. Similarly, Hurd, McFadden and Merrill (1999) find that subjective survival probabilities predict mortality even after controlling for socio-economic indicators and the health conditions. These studies tend to suggest that while there is tremendous heterogeneity of subjective survival probabilities in the population, there does not appear to be any systematic or substantial bias on average. Hurd, McFadden and Gan (2003) do find that that, in a sample of individuals 70 and older, the oldest respondents have average subjective survival probabilities that are substantially higher than life tables (possibly owing to the fact that this survey excludes individuals in nursing homes and other institutions).

5.6 *Shortsightedness*

If individuals place little value on future versus current consumption, then this would decrease demand for standard life annuity products, which by their

very nature are designed to transfer resources to (uncertain) future periods. Research by Warner and Pleeter (2001) estimated personal discount rates for members of the U.S. military. Over 65,000 members of the military were offered separation packages as part of a military drawdown programme in the early 1990's, and these packages offered a choice between a (non-life-contingent) annuity and a lump-sum payment. The annuity was calculated as being equal to 2.5 percent of annual basic pay multiplied by years of service, and this amount was then paid out over a non-life contingent period of time equal to two times the years of service. The second option provided lump-sum equal to 15 percent of one's pay times years of service. The dollar amounts involved were substantial: the package offered to the typical officer was worth approximately $50,000, while the typical enlisted person was offered a package worth approximately $25,000.

The authors calculate that the "break-even" discount rate between the annuity and the lump sum was approximately 17 percent: below this, individuals should prefer the annuity, whereas above this, they should prefer the lump-sum. It is worth noting that a 17 percent discount rate is far higher than that typically assumed in the annuities literature (or, for that matter, the economics literature more broadly). Despite the high break-even discount rate, most individuals (including over 90 percent of enlisted personnel), chose the lump-sum option. The authors estimate that there is considerable heterogeneity in personal discount rates, but that they are quite high on average, with a range from 0 to over 30 percent. Consistent with some prior studies, they also find that discount rates decline with income, education and age, among other factors.

In addition to exhibiting high discount rates, a number of studies have suggested that individuals may exhibit what economists call "hyperbolic" discount rates. As explained by Laibson (1997), "hyperbolic discount functions are characterised by a relatively high discount rate over short horizons and a relatively low discount rate over long horizons. This discount structure sets up a conflict between today's preferences, and the preferences that will be held in the future. For example, from today's perspective, the discount rate between two far off periods, t and t+1, is the long-term low discount rate. However, from time t perspective, the discount rate between time t and t+1 is the short-term high discount rate."

Whether hyperbolic discounting makes annuities more or less attractive depends on whether the hyperbolic discounters recognise their self-control problem and account for it in their current decision-making. If they do not, then the fact that they discount the future highly will lead them to put less weight on the future and thus make annuities less attractive. If they do recognise their future self-control problem, however, then they may wish to use an annuity as a "commitment device." Essentially, but purchasing an annuity, the individual is able allocate consumption across periods t and t+1 according to today's preferences, rather than according to (short-term) preferences that will be applicable at time t.

5.7 Other behavioural hypotheses

In addition to research on framing and default options, a number of additional behavioural explanations have been suggested in the literature. This is not surprising, given that behavioural economics has provided new insights in the closely related areas of retirement savings, pension plan participation rates,

and portfolio decisions, among others. However, the literature on applying the insights from psychology and behavioural economics to annuity decisions is just beginning to emerge. This section briefly reviews some of the existing literature.

Hu and Scott (2007) hypothesise that loss aversion can help to explain why individuals are reluctant to annuitise. They note that, rather than evaluating the annuity as part of an overall optimisation exercise, individuals may use a narrow framing along the lines of "will I live long enough to make back my initial investment?" They argue that if one applies the cumulative prospect theory approach to a narrow framing of the annuity, annuities do not look attractive because the "losses" from the annuity (if one dies young) loom larger in the individual's value function than do the potential "gains" from living a long time. They also argue that this approach can explain the popularity of "guarantees" among those consumers who do purchase annuities, the idea being that guarantees reduce the likelihood that an individual will experience a loss.

Brown (2007) suggests that, rather than buying insurance to payoff in periods where the marginal utility of consumption is high, consumers may use a rule-of-thumb of "I buy insurance against bad events." In other words, individuals may want insurance to pay off when the *level* of utility is low, rather than when the marginal utility of income is high. This rule-of-thumb works well in many cases when a low level of utility corresponds to a high marginal utility (such as the case of life insurance, health insurance, casualty insurance, disability insurance and so forth). In the case of annuities, this heuristic may fail, however, if living a long time is viewed as a good outcome. There is, however, no empirical evidence to support or refute this hypothesis.

It has also been suggested that some consumers may have difficulty thinking of an annuity as an insurance product because it does not have the same "look and feel" as other insurance contracts. Specifically, many insurance contracts charge a flow of relatively small premiums in exchange for large payoffs if some triggering event occurs (*e.g.*, one's house burns down). In contrast, an annuity requires a very large and substantial up-front premium, and then provides a flow of relatively small payments each month until a triggering event (one's death) causes the payments to stop. Several authors (Milevsky 2005; Webb, Gong and Sun 2007; Scott, Watson and Hu 2006) discuss products that charge a much smaller premium and then payoff starting at some distant future date only if the individual survives to that date. These products, sometimes call "advanced life deferred annuities," have become available in the U.S. For example, in 2004 MetLife introduced a product that allows a consumer to use a small portion of his wealth at age 65 to buy an annuity that does not begin paying out until age 85. Chile is currently studying the possibility of a compulsory programme in which individuals would purchase an annuity at retirement that would begin paying benefits at age 80. Because the purchase occurs at retirement, with payments delayed until an older age, this approach differs in an important way from simply mandating the purchase of an immediate annuity at older ages (such as the U.K.'s requirement that individuals partially annuitised by age 75). The "delayed" annuitisation approach may be appealing to consumers because it looks more like an insurance product: the premiums are relatively small (because the future payouts are being discounted by both interest and mortality), and offers a large payoff only if the individual survives to the age at which payouts begin. Webb, Gong and Sun (2007) and Scott, Watson and Hu (2006) report that such a product can capture a disproportionate share of the

welfare gains from annuitisation. A related product is one, such as that offered by Hartford in the U.S., that allows a person to use a portion of their 401(k) plan contributions to purchase future units of annuity income. Because individuals gradually purchase units of income, rather than accumulating wealth per se, this may also help overcome a psychological barrier of converting a large accumulated stock of wealth into income at the time of retirement.

Some authors have also suggested that "regret aversion" could play a role in the annuitisation decision. In particular, individuals might be concerned about purchasing an annuity and then subsequently regretting the decision upon learning negative news about their survival prospects. As noted by Brown (2007), "even if the probability of this outcome is very small, individuals may inflate the probability in making the annuity decision. For example, research in psychology has shown that events that are more easily imagined (*e.g.*, such as dying right after an annuity purchase) are over-weighted in the decision process. (Tversky and Kahneman 1974). However, Braun and Muermann (2003) formally model how regret aversion influences insurance demand, and finds that it leads individuals away from extreme outcomes. This suggests that regret averse individuals are less likely to fully insure, but are also less likely to have no insurance. As noted by Brown (2007), "just as individuals might regret the decision to purchase an annuity, a regret averse individual might also fear the possibility of living to age 110 after having failed to purchase one. More research needs to be done to determine whether or not regret aversion matters for the annuity purchase decision."

There are numerous other potential behavioural explanations of the lack of demand for annuities. These could include models in which individuals are averse to "loss of control," dislike ambiguity, or dislike thinking about unpleasant events, such as growing old or dying. As with the other hypotheses outlined above, however, much more research is needed to determine which of these factors, if any, are empirically relevant.

6. Policy options regarding financial education and annuities

6.1 The context: Is annuity demand fully informed and rational?

Broadly speaking, the appropriate role of public policy in the annuitisation arena depends crucially on whether or not policymakers believe that individuals are making appropriate and fully-informed decisions on their own. Whether financial education regarding annuitisation is likely to improve individual or social welfare is especially dependent on what is driving the observed low rates of annuitisation.

One possibility is that individuals are making fully rational decisions not to annuitise because of problems in the private annuity market that render existing products unattractive. Indeed, the literature is supportive of the fact that there are supply-side imperfections that lead to high prices and/or a limited selection of products available in many countries. If policymakers believe that these market imperfections are the primary cause of the limited market size – and that the demand for annuities would be substantially greater if these imperfections were corrected – then the most useful public policy interventions would be those that eliminated barriers to innovation in the annuity market. Such barriers might include government regulation or tax policy that

purposefully or inadvertently limits the ability of insurance companies to develop products that address consumer needs. One example would be U.S. tax rules that discouraged combination products that simultaneously insure against longevity risk and long-term care expenditures (Brazell, Brown and Warshawsky, 2007). Another example from the U.S. are regulations that impose fiduciary risk on pension plan sponsors when choosing an annuity provider coupled with there being no fiduciary risk for failing to provide an annuity option to plan participants (Perun 2004).

As already noted, however, there are many reasons to believe that supply-side market imperfections are not the primary reason that annuity markets are so small. For example, while prices tend to be much higher than actuarially fair levels in nearly every country, for some demographic groups in some countries, annuities are priced at fairly attractive rates. Yet these prices do not seem to translate into significant demand. Further, even when individuals are confronted with actuarially favorable choices between annuities and lump-sums, many individuals choose the lump-sum. With regard to market incompleteness, the availability of inflation-indexed annuities did not significantly change the annuity landscape in the U.K. or the U.S. While demand for products with guaranteed minimum withdrawal benefits is growing in the U.S., it is far too early to know whether these products will represent a significant share of aggregate retirement income in the future. On net, the international evidence suggests that it is extremely unlikely that there is substantial latent demand for annuity products that is simply waiting for product markets to become more complete.

A second possibility is that individuals are making fully-informed, rational decisions not to annuitise for reasons related to existing high levels of annuitisation from first and/or second pillar pensions, bequest motives, or other considerations. If so, then it is arguably the case that the best policy response would be one of non-intervention. In other words, lacking a compelling case that markets are failing to achieve appropriate outcomes for individuals, it is difficult to know whether government intervention would do more good than harm. However, most studies suggest that fully rational models have a difficult time explaining the lack of annuitisation, at least without creating new puzzles along the way.

A third possibility is that consumers are ill-informed, financially unsophisticated, and are making decisions about annuitisation that are individually and socially sub-optimal. While the evidence is far from incontrovertible on this point, there are numerous reasons to believe that this may, in fact, be the case. First, the economics literature is increasingly filled with studies documenting a wide range of behavioural biases that influence consumer behaviour in nearly all other aspects of the retirement income planning process. It would be highly unusual if consumers who exhibit poor financial knowledge and who make savings and investment mistakes throughout their life suddenly became perfectly rational decision-makers when evaluating options for withdrawing money from their savings plans. Second, several papers suggest that annuitisation decisions are affected by the availability of a default option, a finding that is inconsistent with a view of consumers as being perfectly informed and rational. Third, recent evidence indicates that individuals may be highly sensitive to how annuities are framed, and in particular, whether annuities are presented in a context that emphasizes

consumption features or investment features. This finding is also inconsistent with a model of perfectly rational consumers.

In summary, there is a compelling case to be made that individuals are not making fully informed and fully rational annuitisation decisions. If so, then this opens up the possibility that governments have the potential to improve individual and social outcomes through the judicious use of public policy. The next sub-section presents a number of policy recommendations that are based on this assumption.

6.2 Policy recommendations

6.2.1 Creating an environment that encourages retirement income security

Recommendation 1: Governments as well as public and private pension providers should emphasize that providing a lifelong source of retirement *income* is of equal importance to retirement security as the accumulation of wealth. As both public and private pension schemes around the world increasingly rely on defined contribution plans as a tool for promoting retirement saving, it is important not to lose sight of why individuals are saving for retirement in the first place: namely, to provide resources to finance a stream of consumption during retirement. In the presences of uncertainty about length-of-life, financial products that provide guaranteed, life-long income have an important role to play in individual retirement portfolios. Policymakers should consider proactive steps to encourage annuitisation, possibly including some of the recommendations in section 6.2.2 below.

Recommendation 2: At a minimum, public pensions and regulations governing private pensions should be examined to ensure that annuitisation is not inadvertently discouraged. In a variety of contexts, researchers have recognised that government and employer decisions regarding the design of retirement plans can influence behaviour in a variety of intended and unintended ways. For example, research shows that when employers provide employees with a matching contribution that is restricted to be invested in the stock of the employer, employees respond by contributing *more* of their voluntary contributions into employer stock (Brown, Liang and Weisbenner, 2007). Such behaviour is inconsistent with standard models of portfolio choice, and suggests that employees may view the employer's policy as an implicit "endorsement" of such behaviour. In the context of annuities, government regulations provide a variety of implicit endorsements of behaviour, some of which have the effect of discouraging annuitisation. For example, the tax treatment of annuities relative to non-annuitised products may not only influence the financial attraction of an annuity, but may also serve as a signal that the government favors or disfavors particular types of payouts. It is also important to ensure that private plan sponsors are not discouraged from offering annuity payout options due to concerns about fiduciary liability.

6.2.2 Tools for promoting income security

Recommendation 3: Efforts to educate the public about the importance of sustainable retirement income in the presence of longevity risk should occur throughout individuals' working lives rather than focused solely on the retirement age population. There are several reasons for this recommendation. First, the extent to which individuals effectively utilise products that insure against longevity risk has important implications for how much individuals should save. Put simply, individuals who effectively use life annuities are able to secure a higher stream of retirement consumption than individuals who do not annuitised. Therefore, the "saving" and "annuity" decisions are not separable. Second, ignoring issues of longevity risk during one's working life reinforces the "investment frame" mentality, which may then make the transition to thinking about income and consumption during retirement more difficult. After spending three or four decades exclusively focused on wealth accumulation, it may be psychologically difficult for individuals to simply give up control of their accumulated wealth in order to purchase an income stream. Third, earlier consideration of longevity risk has numerous implications for product design. For example, consumers who are thinking actively about how longevity risk influences future retirement consumption may be more apt to allocate their savings towards products which promise future income streams (*e.g.*, products with elements of delayed annuitisation). Earlier consideration of annuitisation may also help to partially mitigate selection problems and thus improve pricing.

Recommendation 4: Programmes to encourage retirement income security should acknowledge, and possibly leverage, various behavioural biases that influence individual behaviour. Across a wide range of economic behaviours relevant to financial planning, consumers exhibit behaviours that are inconsistent with the behaviour of strictly rational, fully-informed economic agents. An incomplete list of examples include: consumers appear sensitive to implicit or explicit endorsements of behaviour; investors may rely on naïve heuristics for diversifying portfolios; individuals may be subject to status quo biases that limit responsiveness to changes in programmes; individuals may apply overly narrow frames to their lifetime investment decisions. Public policy decisions should recognise these and other potential behavioural biases. For example, to the extent that decisions about how to withdraw money from pension plans is subject to many of these same biases, policy makers may wish to "automate" the payout process as much as possible, rather than assuming that all individuals will rationally choose to annuitise.

Recommendation 5: Policymakers should consider whether the careful use of annuities as the "default option" from pensions and savings plans might be a complement to investing in financial education. Default options have been shown to be quite powerful in influencing behaviour in related contexts. Beshears *et al.* (2007) summarise the large body of evidence indicating that default options can increase participation rates in voluntary employer-provided pension plans, increase the fraction of salary that individuals save, and influence the asset allocation decisions of participants, among other behaviours. In many cases, the use of defaults can have positive welfare effects, such as when non-savers are induced to participate in a pension plan. In other cases, the (potentially unintentional) use of defaults can potentially reduce welfare, such as when the default portfolio allocation is to place 100% of assets in a low-yielding money market fund, rather than a diversified portfolio. It is important

to note that in most situations where there is choice, some option serves as a default, whether intentionally designed as such or not. The relevant policy question is whether that default option should be consciously chosen to encourage a particular behaviour, rather than having the default option selected arbitrarily.

Recommendation 6: Annuities should be used as a default option only if accompanied by certain "safeguards." While annuities provide important opportunities for insuring against longevity risk, they may not be appropriate for all individuals. For example, an annuity would clearly be welfare-reducing for a terminally ill individual who has no chance of living to advanced ages. Indeed, it is for these reasons that there is an upper bound on how much compulsory annuitisation is appropriate.

Yet the very same issues that might lead policymakers to believe that a default is needed – namely, poor financial literacy among consumers – might also lead some individuals to accept the default even when it is clearly against their interest to do so. In such a case, an "all-or-nothing" annuitisation default option may suffer the same disadvantages as a compulsory programme. It is notable that this negative aspect of the default option approach is more important here than in most other contexts. For many decisions – such as whether to contribute to a savings plan or how to allocate one's portfolio – the individual can easily reverse the default should they subsequently decide that the default option is not the best option for his or her circumstances. Traditional life annuities, however, provide a special challenge in this regard due to the largely irreversible nature of the product.

There are a number of ways that a default could be structured to alleviate some of these problems. For example, it might be possible to create a default option with two features: (1) the annuitisation could be gradual, or "laddered," such as by converting 20 percent of the account balance into an annuity each year for five years, and (2) each segment of annuitisation could have a limited period (*e.g.*, a few months) of reversibility. In addition to helping to guard against "accidental annuitisation," the gradual annuitisation approach also helps individuals smooth out asset price and interest rate fluctuations. Another possible default would be to make use of new products that offer a minimum income guarantee, but which provide more flexibility to consumers. For example, a number of financial services companies in the U.S. have recently introduced riders on variable annuity products that offer "minimum guaranteed withdrawal benefits" – in essence, a guaranteed minimum income – while simultaneously offering individuals with some upside exposure to equity markets while limiting downside exposure.

The key is to recognise that "no annuitisation" is surely not the optimal default option. Rather, through the creative use of existing (or yet-to-be-developed) financial products, it is likely that a default can be designed that provides a basic level of secure retirement income for most participants while preserving a degree of choice and flexibility for those who wish to choose differently.

6.2.3 Recommendations for designing and evaluating financial education programmes

Recommendation 7: Governments need to dedicate resources to evaluating the effectiveness of financial education programmes in influencing decisions regarding withdrawals during the retirement period. Governments around the world have expressed an interest in improving financial literacy, and financial education is often suggested as the pathway to achieve this goal. Despite this, "relatively few studies have attempted to estimate the effectiveness of financial education programmes in altering retirement goals or retirement savings behaviour" (Clark, *et al.*, 2006). Those studies that do exist (*e.g.*, Bayer, Bernheim and Scholz 1996; Clark and Schieber 1998; Madrian and Shea 2001; Lusardi 2004) focus primarily on issues related to the accumulation of assets, particularly inside employer-sponsored plans. With regard to how financial education influences decisions about how to withdraw from accumulated savings, there appears to be no systematic research whatsoever. This is a striking deficiency in our knowledge, and correcting it is a necessary condition for designing effective programmes in this area.

Recommendation 8: Evaluations of the efficacy of financial education programmes in this area should focus on measuring changes in behaviour, not just changes in knowledge. There are a large number of issues that an individual must consider when evaluating how to spend down his or her accumulated retirement assets. As a result, the number of dimensions along which financial education might be needed is large. For example, to make a fully informed decision, individuals need to understand the details of how an annuity or an alternative financial product works, the explicit as well as the hidden costs of purchasing such a product, and other product features. In addition, the individual needs to have some knowledge of the distribution of possible lengths-of-life (not just average life expectancy), the implications of having too few resources at older ages, as well as an understanding of other risks that he or she might face (*e.g.*, medical expenditures, inflation). If financial education programmes are too narrowly focused, they may be insufficient to change behaviour.

Recommendation 9: The design and evaluation of financial education programmes must also recognise the role of framing and other behavioural biases. Given the emerging evidence about the importance of framing, the potential exists for improperly framed financial education programmes to reduce, rather than increase, the propensity of individuals to make good decisions about insuring against length-of-life uncertainty. For example, if financial education programmes are delivered in an "investment frame" that focuses on financial risk, rates of return, break-even analysis, and liquidity, this might lead individuals to dislike annuities even more. In contrast, if financial education programmes are delivered in a "consumption frame" that emphasizes the desirability of having a life-long source of income, then individuals might be more likely to purchase annuities.

Recommendation 10: The OECD, notably through the recently created International Gateway for Financial Education, should serve as a clearinghouse for research findings and other information relevant to the design, implementation, and evaluation of "best practices" in the area of financial education and annuitisation. While the specific institutional features of pension

and annuity markets differ around the world, there appear to be strong commonalities in the manner in which individual consumers evaluate the annuitisation decision. As policymakers, market participants, and researchers make progress in expanding our knowledge about these issues, the global dissemination of the key lessons will be important for designing workable, effective and efficient programmes.

7. Conclusions

The aging of the population is an issue of central concern to OECD and non-OECD governments across the world. According to "middle-of-the-road" assumptions, "the ratio of people over 65 to those between 20 and 64 could double between now and the middle of the century. And in some countries, such as Japan, Italy and Spain, this ageing will be much stronger" (Cotis 2003).

These demographic trends will place increased pressure on government budgets due to the predominance of pay-as-you-go pension and health care systems. As a result, it is likely that individual citizens will bear an increasing share of the responsibility for financing their own retirement. A critical part of that responsibility is accumulating resources during one's work life. An equally critical part of that responsibility is making financial decisions that will ensure that one's accumulated resources can provide for sustainable income during retirement. Financial products that guarantee a life-long income stream should therefore play an increasingly important role in individuals' retirement planning processes.

A large and ever-growing body of academic research, however, suggests that consumers around the world have a strong aversion to annuities. This aversion is evidenced both by the small size of voluntary annuity markets around the world and by survey / experimental research that is supportive of a consumer dislike of annuities. When combined with the widespread lack of basic financial knowledge that has been documented in many countries, there are compelling reasons to believe that public policy makers should consider whether there are policies that can improve individual and social welfare outcomes in this context.

Financial education programmes are one policy lever that might prove useful in helping individuals make better decisions about retirement income sustainability. Unfortunately, there appears to be virtually no systematic or rigorous evidence showing whether financial education programmes help individuals make better asset decumulation decisions. Indeed, what little evidence there is about the correlation between existing levels of financial literacy and annuitisation decisions provides inconsistent results. Promoting research and evaluation in this area should be a priority for OECD member nations as well as other countries facing similar shifts in retirement policy.

In the meantime, policymakers may wish to consider whether appropriately designed default options can be implemented to encourage – but not require – increased annuitisation among retirees. While designing appropriate default options is more difficult for the annuitisation decision than for many other decisions, owing to the "irreversible" nature of traditional annuity products, it is quite likely that better default options can be designed. A "no annuitisation" default does not seem to be a satisfactory solution, given the important ways in which longevity risk complicates the financial planning process for most retirees.

Notes

1 The author would like to thank Pablo Antolin and Flore-Anne Messy for very helpful comments on an earlier draft.

2 As noted by Antolin (2007), the uncertainty may be even greater than this due to the fact that the parameters underlying the life table are themselves subject to uncertainty. The extent to which this aggregate uncertainty influences annuity prices is discussed in section 4 below.

3 Figure 1 and the accompanying text are excerpted from Brown (2004) and Brown (2007).

4 This calculation uses a 35-year nominal amortization at an interest rate of 4.58 percent.

5 Life expectancy figures are drawn from the 2004 Social Security Trustee's Report for the 1939 birth cohort—those turning 65 in the year 2004.

6 It is worth noting that several other summaries of potential annuity market limitations exist, although these tend to focus primarily (although not exclusively) on rational market explanations. A good recent example from the OECD Working Papers on Insurance and Private Pensions is Stewart (2007).

7 Married households faced different lump-sum amounts that did not correspond directly with an actuarially fair rate.

References

Agnew, Julie R., Lisa R. Anderson, Jeffrey R. Gerlach and Lisa R. Szykman. 2008. "Who Chooses Annuities? An Experimental Investigation of the Role of Gender, Framing and Defaults." American Economic Review. May.

Antolin, Pablo. 2007. "Longevity Risk and Private Pensions." OECD Working Papers on Insurance and Private Pensions, No. 3. OECD Publishing.

Antolin, Pablo and Hans Blommestein. 2007. "Governments and the Market for Longevity-Indexed Bonds." OECD Working Papers on Insurance and Private Pensions, No. 4. OECD Publishing.

Aura, Saku. 2001. "Does the Balance of Power Within a Family Matter? The Case of the Retirement Equity Act." IGIER Working Paper 202. Milan, Italy: Innocenzo Gasparini Institute for Economic Research.

Babbel, David F. and Craig B. Merrill. 2006. "Rational Decumulation." Wharton Financial Institutions Center Working Paper No. 06-14. July.

Bayer, Patrick J., B. Douglas Bernheim, and John Karl Scholz. 1996. "The Effects of Financial Education in the Workplace: Evidence from a Survey of Employers." NBER Working Paper No. 5655. Cambridge, MA: NBER.

Bernheim, B. Douglas. 1998. "Financial Illiteracy, Education, and Retirement Saving." In Mitchell, O.S., Schieber, S.J. (eds.), *Living with Defined Contribution Plans*. Philadelphia: University of Pennsylvania Press, pp. 38-68.

Bernheim, B. Douglas, Daniel M. Garrett, and Dean M. Maki. 2001. "Education and Saving: The Long-Term Effects of High School Financial Curriculum Mandates." *Journal of Public Economics* 80(3): 435–465.

Beshears, John, James J. Choi, David Laibson, and Brigitte C. Madrian. 2006. "The Importance of Default Options for Retirement Saving Outcomes: Evidence from the United States." Working paper.

Blake, David, and William Burrows. 2001. "Survivor Bonds: Helping to Hedge Mortality Risk." *Journal of Risk and Insurance* 68(2): 339–348.

Blake, David, William Burrows, and J. Michael Orszag. 2002. "Survivor Bonds and Compulsory Annuitisation: Reducing the Costs of Pension Provision." In *Innovations in Retirement Financing*, ed. Olivia Mitchell, 222–233. Philadelphia: Pension Research Council.

Blake, David, Andrew J. G. Cairns, and Kevin Dowd. 2006. "Living with Mortality: Mortality Bonds and Other Mortality-Linked Securities." *British Actuarial Journal* 12(1): 153–197.

Braun, Michael, and Alexander Muermann. 2003. "The Impact of Regret on the Demand for Insurance." Unpublished.

Brazell, David, Jason Brown, and Mark J. Warshawsky. 2007. "Combination of Life Annuities and Long-term Care Insurance: Tax Issues." Unpublished.

Brown, Jeffrey R. 2001. "Private Pensions, Mortality Risk, and the Decision to Annuitise." *Journal of Public Economics* 82(1): 29–62.

Brown, Jeffrey R. 2004. "The New Retirement Challenge." White paper for *Americans for Secure Retirement*. Available at www.paycheckforlife.org.

Brown, Jeffrey R. 2007. "Rational and Behavioral Perspectives on the Role of Annuities in Retirement Planning." NBER Working Paper 13537.

Brown, Jeffrey R., and James M. Poterba. 2000. "Joint Life Annuities and the Demand for Annuities by Married Couples." *The Journal of Risk and Insurance* 67(4): 527–553.

Brown, Jeffrey R., and James M. Poterba. 2006. "Household Demand for Variable Annuities." *Tax Policy and the Economy* 20: 163–191.

Brown, Jeffrey R., Jeffrey R. Kling, Sendhil Mullainathan and Marian Wrobel. 2008. "Why Don't People Insure Late Life Consumption? A Framing Explanation of the Under-Annuitisation Puzzle." American Economic Review. May.

Brown, Jeffrey R., Marcus Casey, and Olivia S. Mitchell. 2008. "Who Values the Social Security Annuity? Evidence from the Health and Retirement Study." NBER Working Paper 13800.

Brown, Jeffrey R., Nellie Liang and Scott Weisbenner. 2007. "Individual account investment options and portfolio choice: Behavioral lessons from 401(k) plans." *Journal of Public Economics*. 91(10): 1992-2013.

Brown, Jeffrey R., Olivia S. Mitchell, and James M. Poterba. 2001. "The Role of Real Annuities and Indexed Bonds in an Individual Accounts Retirement Programme." In *Risk Aspects of Investment-Based Social Security Reform*, ed. J. Campbell and M. Feldstein, 321–360. Chicago: University of Chicago Press.

Brown, Jeffrey R., Olivia S. Mitchell, and James M. Poterba. 2002. "Mortality Risk, Inflation Risk, and Annuity Products," In *Innovations in Retirement Financing*, ed. O. Mitchell, Z. Bodie, B. Hammond, and S. Zeldes, 175–197. Philadelphia: University of Pennsylvania Press.

Brown, Jeffrey R., and Peter Orszag. 2006. "The Political Economy of Government-Issued Survivor Bonds." *Journal of Risk and Insurance* 73(4): 611–631.

Bütler, Monika and Frederica Teppa. 2007. "The Choice between an Annuity and a Lump Sum: Results from Swiss Pension Funds." *Journal of Public Economics*. 91(10): 1944-1966.

Clark, Robert L., Madeleine B. d'Ambrosio, Ann A. McDermed and Kshama Sawant. 2006. "Retirement Plans and Saving Decisions: The Role of Information and Education." *Journal of Pension Economics and Finance,* 5(1)

Clark, Robert L. and Sylvester Schieber. 1998. "Factors Affecting Participation Levels in 401(k) Plans," in *Living with Defined Contribution Plans* edited by Olivia S. Mitchell and Sylvester J. Schieber. Pension Research Council and the University of Pennsylvania Press.

Cotis, Jean-Philippe. 2003. "Population ageing: Facing the challenge." The OECD Observer. September.

Coile, Courtney, Peter Diamond, Jonathan Gruber, and Alain Jousten. 2002. "Delays in Claiming Social Security Benefits." *Journal of Public Economics* 84(3): 357–385.

Congressional Research Service. 2005. "Pension Issues: Lump-Sum Distributions and Retirement Income Security." CRS Report for Congress.

Davidoff, Thomas, Jeffrey R. Brown, and Peter A. Diamond. 2005. "Annuities and Individual Welfare." *American Economic Review* 95(5): 1573–1590.

Drinkwater, Matthew. 2006. "Retirement Income Preferences." Windsor, CT: LIMRA International.

Dushi, Irena, and Anthony Webb. 2004. "Household Annuitisation Decisions: Simulations and Empirical Analysis." *Journal of Pension Economics and Finance* 3(2): 109–143.

Finkelstein, Amy, and James Poterba. 2002. "Selection Effects in the United Kingdom Individual Annuities Market." *The Economic Journal* 112(476): 28–50.

Finkelstein, Amy, and James Poterba. 2004. "Adverse Selection in Insurance Markets: Policyholder Evidence from the U.K. Annuity Market." *Journal of Political Economy* 112(1): 183-208.

Friedberg, Leora, and Anthony Webb. 2006. "Life is Cheap: Using Mortality Bonds to Hedge Aggregate Mortality Risk." CRR Working Paper 2005–12, Boston College Center for Retirement Research.

Gan, Li, Michael Hurd, and Daniel McFadden. 2003. "Individual Subjective Survival Curves." NBER Working Paper 9480.

Gentry, William, and Casey Rothschild. 2007. "Lifetime Annuities for US: Evaluating the Efficacy of Policy Interventions in Life Annuity Markets." Working paper prepared for the American Council for Capital Formation (available at www.accf.org).

Gustman, Alan L., Steinmeier, Thomas L. and Tabatabai, Nahid, "Imperfect Knowledge of Pension Plan Type" (September 2007). NBER Working Paper No. W13379

Herschler, Jac. 2006. "The Surprising Path to Lifetime Income." *NAVA Outlook*. January.

Hu, Wei-Yin, and Jason S. Scott. 2007. "Behavioral Obstacles to the Annuity Market." *Financial Analysts Journal* 63(6): 71-82.

Holden, Karen, & Nicholson, Sarah. 1998. Selection of a joint-and-survivor pension (IRP Discussion Paper No. 1175-98). Madison: University of Wisconsin Institute for Research on Poverty.

Hurd, Michael, Daniel McFadden and Angela Merrill. 1999. "Predictors of Mortality Among the Elderly." NBER Working Paper 7440.

Hurd, Michael, and Kathleen McGarry. 1993. "Evaluation of Subjective Probability Distributions in the HRS." NBER Working Paper 4560.

Inkmann, Joachim, Paula Lopes, and A. Michaelides. 2007. "How Deep is the Annuity Market Participation Puzzle?" Netspar Discussion Paper 2007-011.

International Monetary Fund. 2007. "Mexico: Financial Sector Assessment Program Update—Technical Note—The Pension Annuity Market," IMF Country Report No. 07/163. May.
http://www.imf.org/external/pubs/ft/scr/2007/cr07163.pdf

Johnson, Richard W., Leonard E. Burman and Deborah I. Kobes,. 2004. "Annuitised Wealth at Older Ages: Evidence from the Health and Retirement Study." The Urban Institute. Final Report to the Employee Benefits Security Administration. U.S. Department of Labor. May.

Knox, David M., "The Australian Annuity Market" (November 2000). World Bank Policy Research Working Paper No. 2495. Available at SSRN: http://ssrn.com/abstract=632565

Koijen, Ralph S.J., Nijman, Theo E. and Werker, Bas J.M. 2007. "Optimal Annuity Risk Management." CentER Working Paper Series No. 2006-78. Available at SSRN: http://ssrn.com/abstract=890730

Kotlikoff, Laurence J., and Avia Spivak. 1981. "The Family as an Incomplete Annuities Market." *Journal of Political Economy* 89(2): 372–391.

Laibson, David. 1997. "Golden Eggs and Hyperbolic Discounting." *Quarterly Journal of Economics* 62: 443–477.

Lindeman, David and Juan Yermo. 2002. "Private Annuity Markets." Paper presented at the OECD and INPRS Korea Conference on Private Pensions in Asia, Seoul, October 23 – 25. Available at http://www.oecd.org/dataoecd/51/39/2763708.pdf

Lusardi, Annamaria. 2004. "Savings and the Effectiveness of Financial Education." In Olivia S. Mitchell, ed. Pension Design and Structure: New Lessons from Behavioral Finance.

Lusardi, Annamaria, and Olivia S. Mitchell. 2007a. "Financial Literacy and Retirement Preparedness: Evidence and Implications for Financial Education." Business Economics. January: 35-44.

Lusardi, Annamaria, and Olivia S. Mitchell. 2007b. "Baby Boomer Retirement Security: The Roles of Planning, Financial Literacy, and Housing Wealth." *Journal of Monetary Economics* 54(1), 205–224.

Mackenzie, George A. 2006. Annuity Markets and Pension Reform. Cambridge University Press.

Madrian, Brigitte, and Dennis F. Shea. 2001. "Preaching to the Converted and Converting Those Taught: Financial Education in the Workplace." Working Paper, University of Chicago.

Milevsky, Moshe Arye. 2005. "Real Longevity Insurance with a Deductible: Introduction to Advanced-Life Delayed Annuities." *North American Actuarial Journal* 9(4): 109–122.

Milevsky, Moshe Arye, and Virginia R. Young. 2007. "Annuitisation and Asset Allocation." *Journal of Economic Dynamics and Control*. 31(9): 3138-3177

Mitchell, Olivia S., James M. Poterba, Mark J. Warshawsky, and Jeffrey R. Brown. 1999. "New Evidence on the Money's Worth of Individual Annuities." *American Economic Review* 89(5): 1299–1318.

Mottola, Gary R. and Stephen P. Utkus. 2007. "Lump Sum or Annuity? An Analysis of Choice in DB Pension Payouts." Vanguard Center for Retirement Research. Volume 30. November.

Murtaugh, Christopher, Brenda Spillman, and Mark J. Warshawsky. 2001. "In Sickness and in Health: An Annuity Approach to Financing Long-Term Care and Retirement Income." *Journal of Risk and Insurance* 68(2): 225–254.

National Association of Variable Annuities. 2006. *Annuity Fact Book*. 5th edition.

OECD. 2006. "The Importance of Financial Education July 2006 policy Brief http://www.oecd.org/dataoecd/8/32/37087833.pdf

OECD. 2007a. "Health at a Glance: OECD Indicators." p.22.

OECD. 2007b. "Pensions at a Glance, 2007."

Perun, Pamela. 2004. "Putting Annuities Back into Savings Plans." Working paper presented at the Society of Actuaries Symposium on Managing Retirement Assets, Las Vegas, April 1.

Prudential Financial. 2006. "Learning the Two-Step: A New Approach to Asset Allocation for the Retiree." Prudential Financial white paper.

Salisbury, Dallas. 2002. June 20 statement before the committee on Ways and Means, subcommittee on Oversight, United States House of Representatives. Hearing on retirement security and defined benefit pension plans.

Scott, Jason S., John G. Watson, and Wei-Yin Hu. 2006. "Efficient Annuitisation with Delayed Payout Annuities." Working paper, Financial Engines Inc.

Sheshinksi, Eytan. 2008. The Economic Theory of Annuities. Princeton University Press.

Sinclair, Sven H., and Kent A. Smetters. 2004. "Health Shocks and the Demand for Annuities." Congressional Budget Office Technical Paper Series 2004–09.

Stewart, Fiona. 2007. "Policy Issues for Developing Annuities Markets." OECD Working Papers on Insurance and Private Pensions, No. 2. OECD Publishing.

Tan, Christiana. 2006. "Evaluating Financial Education Programmes." PowerPoint presentation for "Improving Financial Literacy: International Conference hosted by the Russian G8 Presidency in Cooperation with the OECD, 30 November 2006, Moscow." Available at http://www.oecd.org/dataoecd/28/52/37736902.pdf

Turra, Cassio M., and Olivia S. Mitchell. 2005. "The Impact of Health Status and Out-of-Pocket Medical Expenditures on Annuity Valuation." Research Brief (RB) 2005-079. University of Michigan, Retirement Research Center.

Tversky, Amos, and Daniel Kahneman. 1974. "Judgment under Uncertainty: Heuristics and Biases." *Science* 185: 1124–1131.

Warner, John T., and Saul Pleeter. 2001. "The Personal Discount Rate: Evidence from Military Downsizing Programs." The American Economic Review 91(1): 33-53.

Warshawsky, Mark J. 2007. "Recent Developments in Life Annuity Markets and Products." Watson Wyatt working paper.

Webb, Anthony, Guan Gong, and Wei Sun. 2007. "An Annuity People Might Actually Buy." Boston College Center for Retirement Research Issue Brief #7-10.

Yaari, Menahem E. 1965. "Uncertain Lifetime, Life Insurance, and the Theory of the Consumer." *Review of Economic Studies* 32(2): 137–150.

Yoo, Kwang-Yeol and Alain de Serres. 2004. "Tax Treatment of Private Pension Savings in OECD Countries and the Net Tax Cost Per Unite of Contribution to Tax-Favoured Schemes." OECD Economics Department Working Papers No. 406.

Stocktaking Report and Policy Recommendations on Risk Awareness and Education on Natural Catastrophes

Rebekah Green* and Marla Petal+

*Research Associate, Institute for Global and Community Resilience, Western Washington University, Bellingham, WA, RiskRED Core Consulting Team Member, OECD Consultant

+ Visiting Scholar – Columbia University, Lamont Doherty Earth Observatory & Specialist, International Program Development – Bogaziçi University, Kandilli Observatory and Earthquake Research Institute, Disaster Preparedness Education Unit, RiskRED Core Consulting Team Member, OECD Consultant

Executive summary

The growing cost and frequency of natural catastrophes and their implications for economic growth and development have led to a concern over the level of public awareness and education relative to large-scale catastrophes and disaster risk reduction measures. Public awareness and education of disaster risk reduction are, in particular, increasingly acknowledged as important components of effective risk management of natural catastrophes. The financial component of disaster risk management and mitigation strategies, involving risk transfer and compensation strategies, is also recognised as being important for reducing the financial impact of catastrophes on individuals, businesses, and governments, and permitting more rapid economic and social recovery. As such, systematic promotion of public awareness and education of risks and risk reduction measures, including financial loss-sharing and risk transfer tools, is an important aspect of national and international strategies to reduce vulnerability and losses from catastrophic events.

It is recognised in many OECD and non-OECD countries that public awareness and education of natural catastrophe risks must be enhanced. Ongoing education, development, and implementation of related risk reduction measures should be supported. Given the increasing impact of human activity on the scale and costs of catastrophes triggered by natural hazards, these efforts are important for reducing the physical, economic, and social costs of natural catastrophes. In some cases, measures can also help to prevent their occurrence. Risk awareness and education efforts must also take place at every level of society – at the individual, business, civil society, and government levels. Effective and efficient risk mitigation strategies are often beyond the means and control of individuals and must be undertaken by a wide range of players, including governments, industry, educational institutions, the civic sector, and other stakeholders.

In recognition of the importance of public awareness and education of natural catastrophe risks and risk reduction measures for the effective management of large-scale disasters, the OECD has commissioned a stocktaking of selected country efforts to raise public awareness and education of the impact of natural hazards and to enhance awareness and education regarding risk mitigation measures, including financial coverage and protection. The stocktaking covered the public, education, private and civic sectors of 13 selected OECD and emerging economy countries. Hazard-prone OECD countries were selected for the stocktaking, including Iceland, Italy, Japan, Mexico, New Zealand, Portugal, Turkey and the United States. Less hazard-prone countries were added for comparison purposes, including the United Kingdom, Spain and Canada. Finally, the two largest emerging economies outside the OECD, namely China and India, were included both for their population size and the diversity of the hazards that each face.

All of the countries surveyed had some risk awareness and preparedness information that is distributed or made available to the general public by civil defence or other ministries. Memorials and museums located at past disaster sites, hazard resistant construction seminars and materials, and mock

evacuations and disaster drills were also present in many countries. Some countries have risk education in their national curriculum, while others have developed voluntary programmes for risk awareness and risk reduction education in the schools. Some insurance companies and consortiums are directly targeting the public with mass marketing campaigns and information dissemination. There are also examples of large corporations providing or funding risk reduction education for the general public and their employees. Within the growing global awareness of the importance of community risk reduction, the International Federation of Red Cross and Red Crescent Societies and many national civic organisations have also recently begun to include risk reduction education as part of their strategies. The United Nations, through its International Strategy for Disaster Reduction (UNISDR), has been active in internationally promoting better awareness and education of disaster risks and especially disaster risk reduction strategies. International efforts have focused on increasing awareness of national governments and policy makers regarding the risks facing their country and the ways they can reduce catastrophic losses.

Despite the presence of risk awareness and risk reduction education in many countries, there remains significant scope for enhancement. Many government-sponsored and civil society programmes continue to put heavy emphasis on emergency response and citizen response-preparedness. While important, this focus often fails to emphasize the individual and collective actions that can be taken prior to a disaster and may even promote a sense of public helplessness. As evidenced in this stocktaking, a re-direction of focus from response to preparedness, risk reduction and financial protection is occurring, although the change is often slow.

Awareness and education efforts in all sectors could be improved by promoting land use planning, building codes, and insurance schemes as a means of minimising or spreading risk. Furthermore, most countries assessed do not include risk awareness or risk reduction education as a fully-integrated part of school education. While innovative education exists for school age children and their families, it is often implemented in an ad hoc and voluntary way, reducing its impact. Within the private sector, insurance and financial education programmes may benefit clients by including or further emphasizing risk awareness and natural catastrophe insurance education. Regardless of target group or sector of origin, all risk awareness and risk reduction education programmes should seek to be tailored to the particular hazards, vulnerabilities and capacities of its citizens, and improved through evidence-based monitoring and evaluation.

This initial stocktaking suggests that promoting awareness and education of natural catastrophe risks and, in particular, risk reduction measures can encourage voluntary risk reduction activities, including such key measures as safe construction, retrofitting and household preparedness. As part of a broad national risk reduction strategy, it can also strengthen public support for compulsory risk reduction measures such as land use planning, building codes, environmental stewardship and, where applicable, insurance schemes. Raising public awareness regarding natural catastrophic risk and risk reduction strategies is a key component in the promotion of a culture of safety within a nation's borders and beyond. Risk awareness and risk reduction education is a foundation and pre-requisite for effective catastrophic risk management and disaster risk reduction.

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Introduction

On December 26, 2004, tens of thousands of citizens in countries surrounding the Indian Ocean, together with thousands of foreign visitors, felt the shaking of an earthquake. Many were unaware of the potential of a devastating tsunami following such seismic events. Much of the affected coastal construction was vulnerable to seismic vibration and tsunami inundation; during the preceding decades, coastal mangrove forests, which could have reduced the impact of a tsunami wave, had been systematically destroyed. At the cessation of shaking, most people did not immediately evacuate to higher ground. More than 250,000 people lost their lives in the tsunami that followed.

Less than a year later, thousands of New Orleans residents did not or could not leave when public evacuation announcements were made regarding Hurricane Katrina. After the hurricane passed, they were trapped when ill-conceived, under-funded and poorly maintained levees were compromised and the city flooded.

In 2007, the British Isles were overwhelmed by a series of record rainfall and flood events. Commissioned studies following the extensive flooding showed that most people perceived flood risk to be lower than it actually was. When their houses flooded, most residents did not know how to best protect themselves and their property (Pitt 2007).

Today, Japanese and United States residents continue to balk at the perceived high cost of earthquake insurance. Others are surprised to find that past, and even some present-day, building codes do not mandate key hazard resistant features (Tanaka 2005).

Across the globe, citizens from a diverse range of countries are exposed to cyclones, floods, earthquakes and other natural hazards. Most citizens and policy makers are insufficiently aware of the complex risks to which they are exposed. They lack in-depth understanding of the various risk reduction measures they might adopt to reduce their losses. All are drawn unwittingly into amplifying the magnitude of disasters.

Both the United Nations and the Organisation for Economic Co-operation and Development (OECD) report that the economic and human impact of disasters has risen in recent decades (UNISDR 2004). The 20 most costly catastrophes for the insurance industry have all occurred since 1987 (Kunreuther, Meyer, and Michel-Kerjan 2007). Scientific assessments of global climate change suggest that hydro-meteorological hazards such as drought, flash flooding and cyclones may be increasing in both frequency and average intensity. Global population growth and increasing urbanisation in floodplains, on hillsides, and along vulnerable coastal and seismic zones, puts a growing number of human lives and assets in hazard-prone locations. As living standards rise, better construction has reduced the damages from disasters, yet in some areas has also led to increased asset exposure.

The growing costs of catastrophes and awareness of their implications for economic growth and development have led to a concern over public awareness of catastrophe risks and risk mitigation tools, including insurance schemes that can reduce physical and financial exposures. When ill prepared, cities, regions,

and countries can be devastatingly impacted by disasters. Major disasters have economic and social repercussions throughout the region in which they occur, and can affect regional stability and the global economy. Humanitarian responses can only marginally address these issues. The systematic promotion of public awareness and education of risk and risk reduction strategies, including financial loss-sharing and risk transfer arrangements, is increasingly seen as a foundation and pre-requisite for effective catastrophic risk management and disaster risk reduction.

Recognising these trends, the United Nations declared the 1990s to be the International Decade for Natural Disaster Reduction (IDNDR). This was followed by the commitment of 168 nations to the *2005-2015 Hyogo Framework for Action: Building the Resilience of Nations and Communities to Disasters*, led by the ongoing, UN-led collaborative International Strategy for Disaster Reduction (UNISDR). Priority Three of the *Hyogo Framework* highlights the importance of public education. The goal is "to build a culture of safety and resilience at all levels through the use of knowledge, innovation and education" (See Annex I: UNISDR 2005). For disaster reduction to be achieved, governments must enhance public awareness of risks and support ongoing learning, development, and implementation of risk reduction measures (Davis, Hosseini, and Izadkhah 2003).

These trends have also prompted OECD members to be increasingly concerned about the considerable and long-lasting damage that major natural hazards might inflict on global economies and societies. In particular, the financial management of large-scale catastrophes has become a priority topic in the policy agenda of governments in OECD member and non-member states. The OECD has undertaken substantial work in this field over the last years.

In 2003, the OECD International Futures Programmes carried out a major project to define emerging risks in the 21st Century. In parallel, the OECD Insurance and Private Pensions Committee, as well as the OECD Committee on Financial Markets, debated and analyzed the role and capacity of insurance and financial markets to manage and mitigate the losses from natural catastrophes. These efforts focused on implications both for policy makers and insurance and financial market players. This analytical work led to two publications (insurance and expanding systemic risks; the role of insurance in the management of environment-related risks (OECD 2003a, 2003b). It also led, in 2004, to the organisation of a global *OECD Conference on Catastrophic Risks and Insurance* that involved non-OECD countries, including China, India and Indonesia. The proceedings and main policy recommendations drawn from this conference were published in 2005 (OECD 2005a).

As a follow-up to this first sharing of experiences, knowledge, and expertise, and in response to the increasing impact of large-scale catastrophes in both OECD and non–OECD countries, the OECD launched an *International Network on the Financial Management of Large-Scale Catastrophes* in 2005. The *International Network*, established under the aegis of the Insurance and Private Pensions Committee and the Committee on Financial Markets, is intended to bring together interested experts from OECD and non-OECD countries to promote the exchange of information and experiences on the financial management of large-scale natural catastrophes and the development of more effective financial tools and risk mitigation strategies. The *International Network* operates under the strategic leadership of a High-Level Advisory Board, composed of selected high–level experts and executives from OECD and emerging market economies. The

first conference organised under the auspices of the *International Network* took place in Hyderabad (India) in February 2007.

One of the conclusions of the conference was that risk awareness and literacy are essential for disaster preparedness and can help in sustaining financial risk mitigation tools, such as voluntary or mandatory insurance schemes. The Advisory Board to the Network considers it important to promote awareness at all levels of society, especially top-level government decision-makers and elected officials, and to initiate action as promptly as possible. Enhancing risk awareness and education requires a long-term, sustained effort. Some OECD member countries have identified risk awareness and education as being deficient in their countries and as requiring increased attention and support.

The OECD has also undertaken work on the related issue of financial education, which presents similar issues and challenges. A comprehensive project on financial education was initiated in 2003, culminating in an OECD Recommendation on principles and good practices in 2005(OECD 2005b). G8 leaders endorsed the work of the OECD on financial education in 2006. Further work has since been undertaken, including a comparative report and good practices that will be published on the issue of awareness and education of risks and insurance (OECD, 2008). The issue of financial education has also been pursued in the context of private pensions.

Given the importance of promoting awareness and education of disaster risks and risk mitigation strategies in OECD and non-OECD countries, the OECD decided to commission this stocktaking report. The aim of the report is to conduct an initial stocktaking of country efforts to raise awareness and education regarding natural hazard risks and related risk reduction measures, including financial coverage and protection mechanisms. This stocktaking encompasses selected OECD member countries and emerging economies. It identifies good practices and serves as the basis for policy recommendations on awareness and education of risks and risk reduction as a means for strengthening national strategies for catastrophic loss reduction. In particular, it addresses these issues in the context of developed and emerging market countries where financial losses from catastrophes have risen rapidly, even as causalities have stabilised or even fallen. In these countries, physical mitigation and financial loss reduction tools have become increasingly important in national-level strategies for catastrophic loss reduction.

The stocktaking and policy recommendations contained hereinafter are meant to complement UNISDR's efforts to support and promote risk awareness education and disaster risk reduction programmes globally. The UNISDR's efforts have been particularly dedicated to mainstreaming disaster risk reduction globally, but especially within development goals of low-income countries.

In this regards, the OECD project is more directly privileging a governmental-level approach addressed primarily to OECD countries and major emerging economies. In the context of the *International Network*, the project also recognises the important role that the insurance sector can play in raising awareness of risks and related risk mitigation strategies, possibly in partnership with the government and/or the local community.

1. Analytical framework

1.1. Definitions

The management of large-scale catastrophes has emerged from combined concerns of earth science, engineering, economics, civil defence, public safety and environmental protection over the past 30 years (Mcclure 2006; Petal 2008; Ross 1989). Whereas in the past, "natural disasters" or "natural catastrophes" were thought of as one-time occurrences caused by hydro-meteorological or geological events, they are now beginning to be recognised as the combined result of human activity and the natural environment.

With a deepening understanding of catastrophes and the recognition that their severe impacts have root causes in human decisions, has come an understanding that the magnitude of disasters can be significantly reduced. They can be mitigated by actions that prevent and reduce impacts, give prior warning, and spread financial risk. As such, there are *natural hazards* and *natural phenomena* but not "natural" disasters or catastrophes. The goal of disaster/risk/emergency management has begun to shift from relief-centric response to disaster risk reduction and prevention. The need for large-scale emergency response can now be seen as a measure of human failure to reduce risk. With this growing consensus regarding the nature and origin of disasters, a common understanding of key terms is emerging (UNISDR 2005; Wisner *et al*. 2004).

Box 1. Key definitions

(UNISDR 2004, except*)

Natural hazards* Natural hydro-meteorological or geophysical processes or phenomena that may give rise to a disaster if mitigation measures are not undertaken.

Vulnerability The conditions determined by physical, social, economic and environmental factors or processes that increase the susceptibility of a community to the impact of hazards.

Risk The probability of harmful consequences, or expected losses (deaths, injuries, property, livelihoods, economic activity disrupted or environment damaged) resulting from interactions between natural or human-induced hazards and vulnerable conditions.

Disaster A serious disruption of the functioning of a community or a society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community or society to cope using its own resources.

Disaster risk reduction (disaster reduction) The conceptual framework of elements considered with the possibilities to minimise vulnerabilities and disaster risks throughout a society, to avoid (prevention) or to limit (mitigation and preparedness) the adverse impacts of hazards, within the broad context of sustainable development.

Resilience The capacity of a system, community or society potentially exposed to hazards to adapt, by resisting or changing in order to reach and maintain an acceptable level of functioning and structure.

Public and government awareness The processes of providing information to the general population and policy makers, and increasing levels of consciousness about risks and how people can act to reduce their individual and collective exposure to hazards.

Culture of safety* A widespread consciousness of hazards, risks and vulnerability and the understanding and ongoing adoption of measures for disaster prevention, risk reduction, and community resilience.

Hazard, vulnerability and risk

Crucial to a discussion of the management of large-scale catastrophes are the concepts of hazard, vulnerability, and risk. *Natural hazards* have historically referred to natural processes or phenomena that can potentially cause harm to humans or the natural or built environments upon which they rely. These phenomena can include geophysical events (such as earthquakes, landslides, and volcanic eruptions) and hydro-metrological events (such as tropical cyclones, tornados, floods, temperature extremes and wild fires).

Many of these hazards have at least some origin in human behaviour. Global warming, a human-triggered meteorological phenomenon, may become a significant hazard in the near future, both increasing global temperatures and altering the frequency and intensity of hydro-meteorological hazards. The destruction of rainforests can worsen flash flooding and the destruction of mangroves can reduce environmental buffers to storm surge and high winds. While the term "natural hazards" is losing salience as we become more aware of how humans affect the natural environment, it is still often used to distinguish hazards with an environmental trigger from those hazards that are triggered by technological accidents or terrorist activity (Cutter 2002).

While hazard events are a frequent and permanent condition of the biosphere, the effects of such events on humans are dependent upon the actions of the society in which the event occurs. *Vulnerability* to natural hazards refers to the physical, social, economic and environmental conditions that increase susceptibility of a community to the impact of hazards. *Risk*, or the probability of loss, refers to the disastrous consequences expected from a hazard event. Conventionally risk is expressed as a function of hazard and vulnerability, or Risk = Hazard *x* Vulnerability (Wisner *et al.* 2004).

Disaster risk reduction

A *disaster* is defined as a disruption in social functioning with human loss and damages great enough that the affected community needs outside help to cope with and recover from the event. Reducing the devastating impact of natural hazards can be achieved through human actions that limit asset exposure to the natural hazard or decrease human vulnerability to it (Bankoff 2003; Pelling 2003; Wisner *et al.* 2004). This process is termed *disaster risk reduction*.

To reduce the impact of natural hazards, communities benefit from knowledge of the nature, frequency and potential severity of the physical phenomena that may affect them. It is more important, however, that a community understands its particular vulnerabilities and capacities with respect to the hazards it faces. This includes recognising who is likely to be exposed to a hazard, what human and physical resources might be damaged by such an event, and what community strengths may be drawn upon to develop effective resilience against the hazard. Finally, and most importantly, communities need to learn the specific preventative measures they can take to reduce their vulnerability to hazards.

Box 2. Examples of Disaster Risk Reduction Strategies

Land use planning: *e.g.* restricted zoning along seismic faults, in landslide prone areas, and coastal zones, development buffers in areas of fire hazard.

Building codes and enforcement: *e.g.* increased strength requirements for buildings in seismic zones, specifying wind resistant facades in areas of high winds.

Environmental stewardship: *e.g.* protection and restoration of protective environments such as wetlands and mangroves to reduce cyclone impact on human settlements

Structural and non-structural mitigation: *e.g.* strengthening weak structures, properly securing non-structural building elements and building contents, raising flood prone structures

Early warning: *e.g.* tsunami warning and response systems, hurricane forecasting that trigger preparedness activity or evacuation.

Response- preparedness capacity building: *e.g.* hazard drills, stocking of emergency supplies, emergency response training.

Financial coverage of risk: *e.g.* Household and business insurance, reinsurance, compulsory insurance schemes, insurance pools, alternative financial market solutions, public-private ex-ante financial schemes, etc.

Towards a culture of safety

As the members of a society begin to understand the natural hazards they are likely to face, their own vulnerabilities to such hazards, and their capacity to reduce the impact of these hazards, they begin to understand that catastrophic loss is not inevitable. Societies can begin to move away from a culture of reaction – one where disasters are seen as inevitable and resources are focused exclusively on emergency response – to one of prevention and safety. When there is a *culture of safety* -- also referred to as a culture of prevention or a culture of risk -- the focus is on reducing the risk of human, infrastructure and financial losses both before a hazard event occurs and in redevelopment following a disaster. There is a society-wide understanding of risk reduction strategies that leads to the adoption of ex ante and ex post strategies through policies, regulations, incentives and individual action.

Past interventions at the national and international level have achieved a culture of safety in arenas outside of natural hazard risk. For example, childhood vaccination campaigns have been slowly changing public perception of disease prevention and have led the way to vaccination requirements in wealthy countries and disease irradiation campaigns globally. This has dramatically decreased losses resulting from a host of crippling and deadly diseases. In the United States, the safety-belt campaign has been successfully promoted as a means of reducing fatalities in automobile accidents. Public awareness campaigns led to the adoption of safety-belt usage laws and enhanced car manufacturer regulations, bringing safety-belt usage from 11 percent in 1980 to 82 percent in 2005 (NHTSA 2005). These campaigns were multi-decadal, achieving first public awareness, then voluntary behavioural change, and finally institutionalisation through policy adoption.

To achieve the successes seen in other national and global campaigns, the push for disaster risk reduction and a corresponding culture of safety will need to be an on-going and sustained effort over multiple decades and across all sectors of society (Anderson 2005; Johnston *et al.* 2005; Mileti *et al.* 2004). A

fundamental first component of this effort is awareness and education on natural hazard risks and disaster risk reduction strategies.

1.2 Importance of awareness and education of risks and risk reduction

Although public education regarding disasters has historical roots that can be traced back further, concerted efforts began less than 30 years ago (Lidstone 1996). Initial efforts were limited to hazard awareness and response preparedness. More recently, two complementary efforts have gradually begun to emerge - risk awareness and risk reduction education.

Risk awareness education

Awareness and education of natural hazard risks, hereinafter called *risk awareness education*, seek to impart knowledge regarding local hazard phenomena and the damaging effects these hazards may have on a society. Risk awareness education encompasses understanding natural and biological mechanisms that may create hazards and the human vulnerability to these hazards. During the International Decade for Disaster Reduction (IDNDR), risk awareness education became part of various geography and science classrooms and many public risk awareness programmes were created in economically developed nations. Since then, desktop publishing and the widespread use of the internet have significantly expanded the outreach of these early efforts. At the national policy level, OECD's broad work on good practices to enhance risk awareness and education on insurance issues has also promoted stronger risk awareness and insurance education programmes in both the insurance and public sectors for a range of catastrophic and non-catastrophic risks (OECD 2007).

Risk reduction education/capability

Awareness of hazards and vulnerability (and thus of natural hazard risks) will not, by itself, produce risk reduction behaviour. An emphasis on natural hazards and risks can unwittingly impart a message that nature is too powerful and that there is nothing anyone can do to prevent disasters. A focus on the destructive forces of natural hazards or an overarching focus on emergency response can heighten a sense of fatalism in a population, reducing the development of a culture of safety (Finni 2004; Lehman and Taylor 1988; Mulilis and Duval 1995).

Awareness and education of disaster risk reduction measures - or *risk reduction education/capability* – are necessary and crucial component of a culture of safety. Risk reduction education seeks to educate and engage citizens in undertaking effective preventative and mitigation measures that can reduce exposure and vulnerability to natural hazards. Knowledge of efficient and effective risk reduction strategies and measures, including possible financial risk-sharing and risk-transfer arrangements, is an important element of public risk reduction education for individuals, businesses, civil society, and governments.

Risk reduction education generally increases public knowledge and support for four broad spheres of action (Krischenbaum 2002; Petal 2004):

Assessment and planning. The identification of natural hazard risks, human vulnerability and capacity mapping are assessments that can lead to risk reduction planning, such as land use planning, early warning, business continuity or household preparedness planning. Setbacks, buffer zones, property management and building placement have all been used as strategies for reducing exposure to natural hazards.

Physical protection. Physical protection strategies are primary prevention strategies, and while they do not eliminate hazard exposure, they reduce casualties and property loss associated with that exposure. Measures include the use of building codes, retrofitting programmes, and non-structural guidelines for securing physical assets. Fire and flood retardant material usage, clear exit paths, and adequate street widths to ease access for emergency services are also examples.

Response-capacity. Building emergency response capacity, while not a primary prevention strategy, can limit loss during and immediately following natural hazard events. Examples of this include early warning, evacuation plans, "community emergency response" skills, and emergency provision stockpiling. In the post-emergency state, strategies for efficient claims handling by insurance and reinsurance agencies can help reduce confusion and speed recovery.

Environmental stewardship. Risk reduction measures increasingly include the maintenance and enhancement of environmental systems that can buffer or minimise impacts from natural hazard events. Restoration of natural buffers can include planting mangroves to better protect coastal areas from storm surge, improving land cover to reduce landslide risk, and restoring wetlands to act as reservoirs for flood waters. Consensus is also building for stronger policies to reduce green house gas emissions and slow global climate change.

Risk reduction education also has the capacity to enhance awareness and use – at the individual, industry, and governmental level -- of financial protection tools that can facilitate physical and economic recovery from hazard events (OECD 2005a). These tools include private insurance and reinsurance markets, dedicated catastrophe insurance and reinsurance programmes and reinsurance arrangements, insurance pools, and alternative financial market solutions (*e.g.* catastrophe bonds).

1.3 *Framework for understanding risk awareness and risk reduction education*

Figure 1 illustrates a framework whereby a culture of safety is developed. Risk awareness and risk reduction education start with a community's experience and interaction with its natural environment. This begins with the identification of natural hazards and the disasters they may trigger - whether through direct experience, historical knowledge, or probabilistic estimates of future events. Typically, in complex societies, the identification and quantification of natural hazard risks are carried out by public and private agencies, based upon the degree to which risk management is prioritised and funded by the national government and supported by the public.

The general public typically comes to understand hazards, risk, and risk reduction strategies as the risk information is filtered through the public,

private, civic and education sectors. The roles of each sector in supporting and developing risk awareness and risk reduction are listed in Figure 1. Strategies that focus on risk awareness and risk reduction education prior to a hazard are highlighted in bold text, including land use planning, codes and mitigation. Strategies that can decrease the likelihood that the hazard event will become a disaster, reduce the need for and dependence on emergency responses, and promote the spreading of financial risks are also listed in bold. Those activities that can lead to safer actions during a hazard event are listed beneath in plain text. These secondary loss-reduction activities are of vital importance when physical and financial loss reduction strategies have not, or cannot, completely prevent loss.

Risk information that is properly filtered through programmes and policies can help to support the development of a culture of safety. A community that possesses a culture of safety is one that is aware of risks, has knowledge of mitigation strategies, and actively employs these strategies in an effort to not only manage risk, but reduce it.

Four components underpin the successful attainment of a culture of safety:

- First, programmes and policies endeavour to raise awareness -- among individuals and policy makers -- of the risks posed by natural hazards. This risk awareness education at all levels of society is directly linked to the degree that **risk information is provided in a non-technical, personalised, and consistent manner**.

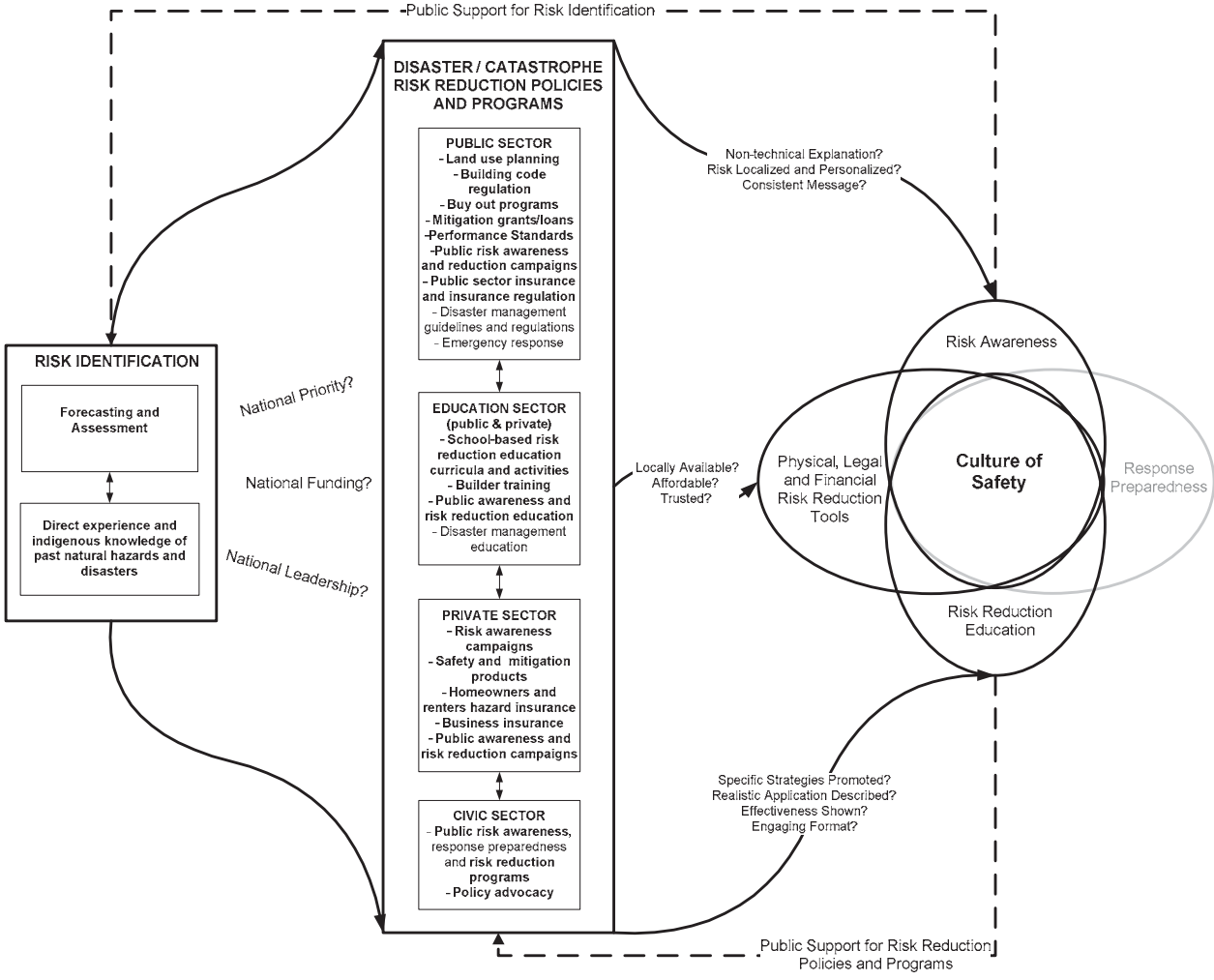
- Secondly, programmes seek to educate individuals, businesses, civic organisations, and government representatives about the range of risk reduction tools and strategies that can be employed to reduce physical and financial exposure to hazards. Risk reduction education strategies will be most easily accepted when the promoted **risk reduction strategies are specific and realistic for local conditions and disseminated through an engaging format**. Trust in the efficacy of these risk reduction strategies will increase when the effectiveness of these strategies is also promoted.

- Thirdly, governments, businesses and households must have *access to physical, legal, and financial tools* for addressing natural hazard risk. These tools are more likely to be adopted when they are **locally available, affordable, and are of sufficient quality** so as to engender public trust in their effectiveness.

- Finally, policies and programmes support individual, organisational and community *response capacities*. This serves to reduce losses when risk reduction tools are insufficient. (Because response preparedness is beyond the scope of this report, this aspect of disaster risk reduction has only been included in the stocktaking effort when it is integrated into risk awareness and risk reduction education.)

The first three components - risk awareness education, risk reduction education, and the availability of risk reduction and protection tools – help create an environment that supports the implementation of risk reduction strategies and the pooling of financial risk. These components, along with adequate disaster response capacity, form the foundation of a culture of safety.

Figure 1. From natural hazard risk identification to implementation of countermeasures



How it can work

In countries where risk awareness and risk reduction education have been ongoing and sustained, changes in perception and behaviour have been achieved, especially when multi-decadal public education campaigns have been in combination with the development of efficient risk reduction tools. For example, the institutionalisation of annual earthquake drills, student risk reduction education, and a corresponding public media campaign was seventeen years in the making in Iran (Izadkhah and Davis 2006). In the United States, efforts to raise awareness about how strict building codes can limit damage from hurricanes are several decades old. While significant progress has been made, it was only following Hurricane Katrina that some Gulf Coast states adopted international construction standards in coastal jurisdictions (ICC 2006).

Successful risk awareness and reduction education programmes are ones that have been sustained, repeated, and consistent across the public, education, private and civic sectors. They are carried out through parallel and collaborative

action of governmental bodies, insurance sector representatives, corporate leaders, civil society organisations, and educational institutions.

Many governmental bodies have set disaster risk reduction strategies and priorities, as well as written and enforced important legislation regarding land use planning and building codes. Some have created incentives for risk-wise behaviour in the general public and played a leading role in promoting disaster risk awareness and risk reduction education in communities within and beyond their jurisdiction. Some governments have partnered with the civic and education sectors to facilitate, support, disseminate and fund education initiatives, set guidelines for educational curricula, and institutionalise risk awareness and risk reduction education within national curricula. Where the public has failed to take risk reduction steps voluntarily, many governments have set policies for mandatory risk reduction measures and encouraged public acceptance of these measures.

Insurance companies and industry consortia (private and public sector) have had an important role to play in designing and providing appropriate, effective, accessible and affordable tools to protect households and the economy against the financial consequences of large-scale disasters. These products attempt to provide incentives for individuals and businesses to adopt risk reduction measures. Some insurance companies and industry consortia have worked with the civic, private and education sectors to also educate current and potential policyholders about risks, risk insurance, and risk reduction measures. Significantly, many companies in the insurance and reinsurance industry have played a key role in developing risk mapping and risk modelling, sometimes in partnership with the public sector.

The corporate sector has also played an important role in risk awareness and risk reduction education. Many businesses have developed continuity planning, serving as a role model for similar processes throughout society. Through internal and community service initiatives, companies have also encouraged risk reduction and preparedness in their communities and funded civic sector risk awareness programmes. Through innovation and technology development, they have supplied communities with the tools to carry out effective risk reduction. For those businesses involved in the production and maintenance of the built environment, adoption of physical protection measures has directly impacted the physical vulnerability of a community as well as public understanding.

The civic sector has played a key role in educating communities about risks and risk reduction strategies, often acting as a liaison between scientific and local community-based implementation efforts. Community organisations have offered indigenous leadership, social networks, and often provided much needed energy to reach out to and engage community members (Victoria 2005). They have also acted as a catalyst to bring communities together to support and even demand risk reduction strategies and tools from both the private and public sectors. Partnering with the public, private and education sectors, they have worked to produce and disseminate important risk awareness and risk reduction education material.

The formal education sector, whether government-sponsored, community-supported, or privately funded, has often taken up the task of imparting awareness of risks and risk reduction to students of all ages. Yet, this sector has often lacked a clear mandate, resources, training and teacher support to enable

teachers and administrators to fully incorporate risk awareness and risk reduction into formal and informal education.

Through long-term strategic plans, each sector can seek ways to enhance their impact through partnership collaboration and by building upon the efforts and lessons learned across all sectors, jurisdictions and boundaries.

1.4. Challenges to risk awareness and risk reduction education

Risk awareness and risk reduction education play key roles in catastrophic risk management. Yet the complexity of learning and adopting risk reduction measures suggested by the "transtheoretical model of learning" indicates that there are significant challenges. The transtheoretical model of learning proposes that when challenged with a call to action, people go through a series of steps. These steps include pre-contemplation, contemplation, preparation, action, and finally maintenance of preparation (Velicer *et al.* 2006). Risk awareness and reduction education must scaffold this process of change and build a sense of personal and collective efficacy, avoiding past strategies that focused public understanding on post-event emergency response.

The research described below details some hindrances to effective risk awareness and risk reduction education. These challenges suggest reasons for both the limited number of programmes and the perceived marginal efficiency of these programmes. Unfortunately, these challenges have often been used as excuses for inaction.

Limited knowledge

At a basic level, knowledge of hazards is often limited due to the low probability of these events. It has only been in the past century that many geophysical and hydro-meteorological hazards have been scientifically understood and quantitatively measured. Despite the rapid advancements in the field, great time lapses between events and potential multi-decade and even multi-century variation make precise prediction of events difficult and often impossible. The field of risk assessment is often fraught with uncertainty that, while often quantifiable, is difficult to express in non-technical terms to policy makers and the general public.

Understanding terminology

The use of advanced mathematical concepts of probabilities to express risk is notoriously problematic in risk awareness and reduction education. While probabilities, recurrence intervals, and frequencies often help quantify uncertainty in the scientific community, they are difficult concepts to convey accurately beyond this community. Evidence suggests that individuals do not seek out information on risk probabilities when making decisions (Camerer and Kunreuther 1989). Instead, people rank risks relative to one another, although they often fail to accurately calibrate their rankings (Kunreuther, Meyer, and Michel-Kerjan 2007).

People are more able to understand and incorporate probabilistic concepts when presented as concrete comparisons with other familiar hazards (Kunreuther 2001). It is easier for people to think in terms of the chances of an event occurring in "my lifetime" or "my children's lifetime" than in probabilities

of occurrence within a set timeframe. Even so, probabilistic expressions of risk often have little immediacy to risk reduction strategies and possibly even negative impact on risk-wise behaviour (Gupta 2002; Paton, Smith, and Johnston 2005).

Use of scientific or technical terms is also problematic when presenting risk reduction strategies to policy makers and the public. Research conducted by *State Farm* for the *Institute for Business and Home Safety* suggests that explanations using the term "mitigation" may be less effective than those that stress "protection." Positive, non-technical terms such as "disaster protection", "disaster safety", "family protection" and "community safety" are more effective when communicating with the public.

Risk perception

Even when risks are accurately portrayed in multiple, non-technical ways, they are understood and personalised differently across populations (Hurnen and Mcclure 1997). Research in the United Kingdom has shown that Environmental Agency flood warnings issued about specific water courses were not effective for many residents who understood their local geography in terms of neighbourhoods rather than in terms of hydrological systems (Pitt 2007).

Risk perceptions also vary across geography and populations, making it important that risk awareness and risk reduction education efforts are tailored and specific. For instance, perceptions of environmental risk vary across ethnic groups within the United States (Vaughan and Nordenstam 1991). Risk perception may also be strongly affected by political and economic structures of a country (Vari and Kemp 1991). Social factors such as social status, professional, political and religious affiliations can further alter risk perception (Rohrmann 2000). Women are also more likely to perceive hazard events as serious, to apprehend information about risk reduction strategies and to act upon them (Cutter 1994; Fothergill 1996). Families with small children, elderly or disabled populations, and minority language speakers among others may have vulnerabilities, needs or protection strategies that differ from a wider population. Differences in risk exposure, vulnerability and perception are taken into account in effective risk awareness and reduction education programmes.

Individual bias

Research has also shown that individuals are affected by a series of biases when assessing risk and deciding whether or not to act. Of considerable concern for risk awareness and risk reduction education is the pervasiveness of "optimistic bias." People generally anticipate risks, but believe that others will be more severely affected than themselves (Weinstein 1980). More accurate judgment concerning low-probability, high-consequence events seems to be directly related to a subject's ability to easily retrieve memories or examples of such events (Slovic 2000). "Anchoring biases" – where people do not adequately alter initial assessments of risk based upon new information - also affect people's understanding of natural hazard risk (Tversky and Kahnemann 1974). When dealing with low-probability, high-consequence hazards, people tend to believe "it can't happen to me" before they experience a disaster, thus, failing to consider the heavy consequences. Following a direct experience of a hazard

event, people may move to the opposite extreme, believing "it will happen to me" even though probabilities remain low (Kunreuther 2001).

Biases regarding disasters are also propagated through media portrayals of events and common myths about disasters. The media tends to sensationalise very small probability events and high consequence hazards (Evans, Frick, and Schwing 1990; Whittaker 1986) to the exclusion of more frequent, smaller, or chronic disasters. Common disaster myths are pernicious, even within trained emergency response personnel. Disinformation contained in media reports of health risks after a catastrophe, reports of public panic and looting, and even erroneous attribution of causes of casualties confuse people and decrease a sense of control (Alexander 2007). Particularly disempowering are myths that victims of hazard events will be quickly saved by national or international rescue. Persistence of these myths among the public, in the media and even within the emergency response community can work against the development of a culture of safety. These myths must often be addressed in order to effectively teach risk reduction strategies and promoting self-efficacy.

Box 3. Risk awareness versus risk reduction action

Many studies of risk perception show that awareness of hazards does not automatically lead to desired risk reduction or preparedness activities.

- In a nation-wide study of public attitudes in the United States, 20 percent of the respondents felt that a severe hazard event would directly harm their household in the next five years. While approximately 75 percent had seen information about how to protect themselves from natural hazards, fewer than 40 percent of the survey respondents had any disaster preparedness kits in their households and only a quarter felt very prepared for a natural catastrophe (IRC August 2006).
- In 2006, the Icelandic Civil Defence conducted risk awareness town meetings and a full day of risk awareness education and evacuation drills for volcanic flood hazard. They were successful in raising awareness about this natural hazard and evacuation procedures. In follow-up research, 100 percent of the residents surveyed could accurately describe how and why volcanic flooding could occur; 95 percent were aware of evacuation procedure. They were less successful in getting the public believe that they might be affected by such a hazard event, a pre-requisite to taking action to reduce risk. Only 50 percent of the same residents really believed their region could be affected by volcanic flooding (Bird, forthcoming).
- The Association of British Insurers (ABI) recently commissioned a survey of public attitudes to climate change risk, including flooding. The overwhelming majority of the 2012 respondents (85 per cent) identified flooding as a risk affecting the UK, but only 16 per cent considered themselves at risk. Another study by Harries found that only 39 per cent of previously flooded England and Wales residents had taken any action to prepare for floods. A much smaller percentage, only 6 per cent, of people without prior flood experience took any action (Pitt 2007).

For a culture of safety, risk awareness must be combined with risk reduction education that promotes effective and appropriate strategies for reducing risk prior to a disaster.

Over-emphasis on hazards, destruction and emergency response

One of the greatest challenges to effective risk awareness and risk reduction education is the leap that is typically made from educating the public about natural hazards and their risks to promoting response preparedness. Often bypassed is an understanding of personal and communal vulnerability to hazards and the range of possible coverage alternatives and risk reduction measures. While some programmes have successfully increased public knowledge about the hazards, they have not fully explained the associated risks or consequences, and have not delineated what can be done to reduce them.

Not only is hazard risk awareness insufficient for risk reduction action (Mcclure 2006), but undue focus on hazards can even hamper risk reduction activities. Efforts to "scare" people into action have proven counter-productive. Excessive exposure to images of damage and destruction tends to increase people's anxiety level and lead to avoidance and denial (Finnis 2004). Focus on destruction and risk can also divert attention from problem-solving and push people towards emotion-focused disempowerment (Finnis 2004; Lehman and Taylor 1988; Mulilis and Duval 1995).

To help people move from risk awareness to risk reduction behaviour, education programmes must find ways to make specific information accessible to the target audience. When individuals can refer to a specific list of precautionary measures, they are more realistic in their assessment of their level of risk and more likely to take action (Weinstein 1980). Similarly, people must personalise the probable consequences of disasters before they will act (Mcclure 2006; Palm and Hodgson 1992).

For education efforts to be successful, people also must believe in the effectiveness of risk reduction strategies (Lindell and Perry 2000; Mulilis and Duval 1995). Theories of planned behaviour suggest that people's beliefs regarding social pressure and their own ability to be effective have an important impact on their decision to act to reduce their risks (Ajzen 1991). Studies show that people are more likely to believe in the effectiveness of risk reduction behaviour when a description of why this behaviour will be effective is clearly presented (Mcclure 2006).

Disincentives to increasing risk awareness

Mitigation is clearly efficient (Kelman 2007), yet both policy makers and the public are often entirely unaware of the tremendous cost-benefits of risk reduction. When addressing the United Nations General Assembly in 1999, Secretary General Kofi Annan cautioned that "building a culture of prevention is not easy. While the costs of prevention have to be paid in the present, its benefits lie in a distant future. Moreover, the benefits are not tangible; they are the disasters that did NOT happen" (Annan 1999). Significant challenges to risk awareness and risk reduction education are the disincentives to the adoption of risk reduction measures at the individual, community and public sector level.

Decision-makers are faced with a "politician's dilemma" when choosing to fund risk reduction measures or advocate for policies that impose regulatory measures to limit exposure to hazards. Short political time-horizons often mean that rapidly responding to a disaster is perceived as more advantageous than investing in long-term disaster risk reduction (Kunreuther, Meyer, and Michel-Kerjan 2007). Though studies indicate that funds spent on pre-disaster risk

awareness and risk reduction measures save seven times this amount in post-disaster aid (Kelman 2007), these aspects of catastrophic-loss management are often underappreciated in high risk regions. When measures are adopted, it is hard for politicians to capitalise on the disaster that does not happen. On the other hand, heightening public awareness of risk can lead to public outcries demanding action and pressure to spend limited funds on risk reduction measures that may have little immediate benefit. For these and other reasons, past political and humanitarian engagement has focused primarily on post-disaster response.

The general public often resists learning about natural hazard risks of which they have little or no direct experience. They avoid investigating options for physical and financial protection and rarely adopt even cost-effective measures voluntarily. Individuals may underestimate the likelihood of a future disaster, or perceive mitigation measures as too costly by benchmarking these costs to less expensive home repairs. It is often seen to be easier and more advantageous to postpone investment in voluntary risk mitigation and catastrophe insurance. Due to the low-probability of most natural hazards, this procrastination rarely results in immediate and severe consequences (Kunreuther, Meyer, and Michel-Kerjan 2007). Given the many competing choices available, people are often unwilling to "delay gratification" and invest in insurance policies, retrofitting and other risk reduction strategies where gratification may not be experienced for years, or even ever.

Those who have directly experienced the loss and hardships associated with post-disaster recovery are often the most eager to learn about future hazards and engage in risk reduction behaviour (Helweg-Larson 1999). Those who experience hazard events and escape with little damage may end up reinforcing the advantages of *not* investing in risk mitigation measures. Low-probability, high consequence risks have proven to be particularly poor at positively reinforcing voluntary adoption of risk reduction measures, even when such adoption is individually and socially optimal over a long time span (Kunreuther, Meyer, and Michel-Kerjan 2007).

The public also faces what has been termed the "Samaritan's dilemma" when deciding whether to invest in risk reduction measures or purchase insurance to cover natural hazard risks. They often believe that *ex post* assistance will exist for those who have not adequately protected themselves. Some risk awareness and reduction education campaigns can cause the public to believe that the agency sponsoring or promoting the education is doing something to protect them (Mcclure 2006). Post-disaster humanitarian and financial assistance to individuals unable to adequately protect themselves reinforces the assumption that aid will be provided in the future and that individual action is unnecessary. Risk awareness and risk reduction education must carefully delineate public and individual responsibilities for risk reduction to counteract this Samaritan's dilemma.

As evidenced in the national and regional actions described in the stocktaking below, a re-direction of focus from response to preparedness, risk reduction and financial protection is occurring, although the change is often slow. Despite the significant challenges, risk awareness and risk reduction education is a necessary pre-requisite to building support for and application of community-wide risk reduction measures. There is a need to focus limited resources on raising awareness and improving knowledge of risk mitigation and financial protection tools to the risks that are most likely to cause significant

human, physical and financial losses. Risk awareness and risk reduction education priorities should be risk-based, tailored to the hazards of the region and the particular vulnerabilities and capacities of its citizens.

2. Stocktaking

2.1 Scope of stocktaking effort

In order to better understand the current state of risk awareness and risk reduction education worldwide as a basis for policy recommendations to support and improve these efforts, the OECD commissioned a 13-country stocktaking of risk awareness and education programmes.

The thirteen countries selected for this stocktaking effort include many of the most hazard prone OECD countries. Hazard prone OECD countries selected for the stocktaking included Iceland, Italy, Japan, Mexico, New Zealand, Turkey and the United States. Other, less hazard-prone countries were added for comparison, including Canada, Portugal, Spain and the United Kingdom. Finally, the two largest emerging economies outside of OECD, namely China and India, were included both for their population size and the diversity of the hazards that each face. While far from an exhaustive evaluation, these countries vary in geographic size, GDP, and hazard exposure. A comparison of the countries can be found in Table 1.

The stocktaking of risk awareness and risk reduction education described in this report focuses on programmes that address risk reduction prior to the occurrence of a hazard event. This stocktaking also included awareness programmes that encourage public understanding of the role of risk insurance in covering losses from catastrophic events and in smoothing the recovery period. Science education programmes about hazards in general were not included. Importantly, emergency response training programmes were *not* included in the scope of this report unless they include a substantial public education focus on risk awareness and risk reduction. This is consistent with the growing emphasis on risk reduction, prevention and resilient development within the international community. Nonetheless, many of the programmes reported here continue to place major emphasis on public education for response preparedness, and have considerable scope for improving risk reduction education.

For each country included in this stocktaking effort, major natural hazards were identified. These hazards included geophysical hazards – geological fault activity, debris flows, volcanic activity, tsunami and hydro-meteorological hazards - tropical cyclones, floods, storm surges, severe storms, avalanches, wildfires, and temperature extremes. It should be noted that while the effects of climate change are often tracked at the international level, there is also a growing need for climate change risk awareness and risk reduction education material at a more local level.

For each country selected, a stocktaking of risk awareness and risk reduction education was carried out. This stocktaking looked at efforts in the public, education, private, and civic sectors as well as cross-sectoral partnerships and international efforts. The primary focus was on programmes, campaigns, and educational material aimed at increasing awareness of large scale natural

hazards and risk reduction measures, including strategies for financial loss-sharing and risk transfer. Most of these campaigns and materials were targeted at the general public, though care was taken to also include programmes that targeted knowledge disseminators and policy makers whose decisions or opinions would likely affect a community's vulnerability to natural hazards.

The assessment focused not only on the existence of risk reduction education efforts, but on content depth, distribution mechanisms, and the achievements of these programmes. To a limited degree, programmes were evaluated as to their strengths and weaknesses, the appropriateness of their methods and message for vulnerable populations, and their effectiveness. Opportunities for improvement were also noted.

The stocktaking effort was achieved primarily through interviews with key personnel in each country, review of scholarly articles, and an assessment of material available on the internet. The stocktaking was limited to information that could be easily accessed through these methods, thus, restricting the assessment primarily to programmes and materials produced and distributed at the national and regional levels. As such, this is not an exhaustive assessment of all programmes in the countries selected. In particular, it does not capture many of the local, grassroots efforts that can have a vital impact on any nation's risk awareness and reduction.

This stocktaking represents a thorough, initial overview of large-scale efforts in the countries selected and is a solid basis from which to evaluate the current state of risk awareness and risk reduction education. It is also a strong foundation from which to develop policy recommendations for enhancing these programmes in the future. However, it does not constitute a substitution for a more in-depth stocktaking at the individual country level.

Table 1. Natural hazard disasters (NHD) by country

(Ranked by number of casualties in ten largest recorded disasters 1900-2007*)

Country	GDP (ppp)/ per capita, 2006 USD	Population (est. July 2007)	Examples of Major Hazards	Recorded Number Killed in ten largest recorded NHD	Estimated Number Killed per 1000 population	Recorded Number affected in ten largest recorded NHD
OECD Countries						
Japan	$33,100	127,433,494	Earthquakes, typhoons, tsunamis, volcanic activity	178,286	1.4	15,763,481
Italy	$30,200	58,147,733	Landslides, mudflows, avalanches, earthquakes, volcanic eruptions, flooding	137,977	2.4	3,708,535
Turkey	$9,000	71,158,647	Earthquakes, drought, floods	78,491	1.1	7,044,870
Canada	$35,600	33,390,141	Severe storms, earthquakes, flooding	51,417	1.5	2,255,000
United States	$44,000	301,139,947	Hurricanes, earthquakes, tornados, wildfires, flooding, debris flows, tsunamis	16,603	0.1	11,668,065
Mexico	$10,700	108,700,891	Earthquakes, hurricanes, tsunamis, volcanic activity	16,512	0.2	9,448,465
Spain	$27,400	40,448,191	Drought, extreme temperature	16,408	0.4	6,820,350
New Zealand	$26,200	4,115,771	Earthquakes, volcanic activity, landslides, floods	7,210	1.8	39,156
United Kingdom	$31,800	60,776,238	Winter windstorms, floods	4,672	0.1	859,512
Portugal	$19,800	10,642,836	Extreme temperatures, earthquakes	3,340	0.3	202,710
Iceland**	$38,000	301,931	Earthquakes, volcanic activity	51	0.2	5,768

Table 1. Natural hazard disasters (NHD) by country *(continued)*

(Ranked by number of casualties in ten largest recorded disasters 1900-2007*)

Country	GDP (ppp)/ per capita, 2006 USD	Population (est. July 2007)	Examples of Major Hazards	Recorded Number Killed in ten largest recorded NHD	Estimated Number Killed per 1000 population	Recorded Number affected in ten largest recorded NHD
Non-OECD Countries						
India	$3,800	1,129,866,154	Droughts, flash flood and monsoon, severe storms, earthquakes	8,873,000	7.9	1,287,500,000
China	$7,700	1,321,851,888	Typhoons, floods, earthquakes, drought	8,409,000	6.4	1,356,489,476

*Top ten recorded disasters, associated causalities and number affected based upon events listed in the EM-DAT database (CRED 2007) as queried Feb 29, 2008. In country records of population, hazard and exposure may be more accurate. See the EM-DAT database documentation for further details on compilation of disaster loss and statistics.

**Earliest Icelandic record in 1974.

2.2. Review of programmes and assessment by sector

The stocktaking found some risk awareness and risk reduction education in all countries surveyed. In general, these education efforts were minimal in countries that experienced severe natural hazards infrequently. Countries that experienced more frequent and severe natural hazards tended to have more advanced programmes. However, the emphasis, location, and systemisation of risk awareness and risk reduction education programmes within countries well-versed in natural hazards varied markedly. Variation across countries and good practices are discussed below in five broad groupings: the public, education, private and civic sectors, as well as international efforts. It should be noted that many efforts are the result of cross-sectoral collaboration.

The public sector and public sector led partnerships

Public awareness campaigns and events

The most systematic public education efforts are often built around widespread campaigns. The chief features of these campaigns are a series of messages and materials which are distributed through a wide variety of print, radio, television and internet outlets, as well as sometimes through performing and cultural arts. Mascots, appealing graphics and iconography and positive messages to take action are typically part of these campaigns. They involve mass distribution of messages and are typically partnerships between

government, civic organisations, mass media outlets, and private sector sponsors.

The *Firewise Community Program*, supported by a multi-agency collaboration in the United States, uses workshops, conferences, printed and online material to promote wildfire risk reduction. The campaign promotes environmental stewardship, land use planning, building codes and individual preparedness as a means of reducing risk. It targets a range of individuals, including individual homeowners, fire-fighters and policy makers. In Turkey, a new policy requiring *Turkish Mandatory Earthquake Insurance* has been promoted through a mass media campaign that has included billboards, television advertisements, the use of celebrities and more traditional printed educational material (Turkmen 2007). In California, partnerships between the public sector and research institutions have resulted in a strong and sustained earthquake risk awareness and preparedness *Putting Down Roots in Earthquake Country* campaign. While public campaigns are typically multi-agency and multi-sectoral, occasionally they are primarily the work of one governmental agency. New Zealand's Ministry of Civil Defence and Emergency Management implements the broad mass-media education campaign, *Get Ready, Get Thru*.

Some national, regional and city governments have promoted natural hazard risk awareness and preparedness through official days, weeks or months, observed on an annual basis. Examples include Canada's *Emergency Preparedness Week*, a collaborative effort between the *Public Safety Council* and regional governments (Obonsawin 2007), the United States' newly launched *National Preparedness Month*, Japan's *Disaster Preparedness Day*, and the *National Day for Disaster Reduction* in India (Kuberan 2007). In the Marmara region of Turkey and Orissa State in India, regional events mark the anniversaries of major disasters. An earthquake anniversary in Turkey has been used as the catalyst to create a *Disaster Education Week* for primary schools. Disaster preparedness materials are sent home to families. Students also compete in related contests, engage in evacuation drills and are visited by civil defence officers (Turkmen 2007). Internationally, the UNISDR has designated the second Wednesday of October as *International Day for Disaster Reduction*.

Activities associated with these official periods include the printing of preparedness material, media promotion of awareness, public school activities, commemorative events and drills. When in connection with anniversaries of past disasters, such as *Japan's Disaster Preparedness Day and Evacuation Drill*, these official periods have compelling meaning and often generate significant media coverage that can spur individuals and communities to seek out information about hazards and risk reduction measures. Sustained and repeated campaigns can also generate similar activity, while continuing to remind the public of natural hazard risks and risk reduction. In the public sector, these periods can also be a time for scrutinising of past efforts and planning for the future.

Some events of this nature suffer from fragmentation and tokenism, and lack sufficient depth or length. To be effective, preparedness campaigns should ensure that the public receives consistent messages repeated over an extended period of time and from multiple sources. Preparedness events must be repeated annually, so as to create public recognition, anticipation and to reinforce what was learned during previous events.

Distribution of public education material

In some countries, the mass distribution of printed material has been used as a risk awareness and risk reduction education strategy. These brochures typically outline major hazards, appropriate emergency responses, and strategies for reducing risks. The United Kingdom and Iceland have achieved complete coverage, mailing such brochures and booklets to every household. The United Kingdom's *Preparing for Emergencies* booklet was mailed to 25 million households. Other countries, such as the United States and Italy, have targeted smaller regions for specific hazards using newspapers or utility bills for the mass distribution of messages. Many countries have printed information packets available on request, typically at no cost to the recipient.

Mass mailing can raise awareness about hazards and be valuable references for the public. In the United States, a study of the effectiveness of a mass-mailed pamphlet found that residents had received information via other mass media outlets, but liked having a physical document to which they could refer. Another assessment of similar measures found that a weekend newspaper inset led to behaviour change. Respondents noted that they chose to take action because the insert clarified local risks, gave specific risk reduction measures and reinforced information they had heard elsewhere (Nathe *et al.* 1999). These studies highlight the potential effectiveness of mass distributed education materials when they aim to increase understanding of specific, local risks and list explicit risk reduction strategies.

One concern of the mass distribution of printed material is that it will be eventually discarded or become outdated. Distribution is also costly; the United Kingdom's effort costing £8.3 million. Moreover, these programmes are one time endeavours and are not often repeated or updated. British residents and scholars interviewed doubted any lasting impact had been achieved through the mass mailing campaign in the United Kingdom, many noting that the heavily terrorism-focused booklets were quickly discarded.

More useful have been targeted attempts to directly contact those at risk in time for protective action to be taken. The United Kingdom's Environmental Agency has instituted a voluntary Flood Warnings Direct service. When an area experiences rising flood waters, the service sends a warning message via telephone, email, or text message to residents of the affected area. Sign-up for this service has remained below 50 per cent - even in high risk areas - yet research has shown that over 75 percent of those who receive such warnings take action. Services such as these need further public promotion as effective risk awareness tools for hazards with slower onset. Increased effectiveness may also be achieved by linking warning services to effective support venues that provide additional risk information and guidance on protective action during emergencies.

A programme in Iceland has found an innovative means of ensuring longer retention of their brochures. There, each family is given an emergency preparedness placard. One side gives clear information about risks and instructions on emergency evacuation procedures. The other side is a sign to be hung in the window of all homes after a family has successfully evacuated. Researchers interviewed noted that Icelandic residents have retained these placards in convenient locations and are aware of their use and content.

Box 4. Sponsorship of Research on Risk Awareness

The national government of New Zealand funds the research group *Resilient Organizations* to research lifeline infrastructure and business organisations. The research builds tools and techniques for organisational and business continuity in the case of natural hazard events. It looks at organisations and their capacity to understand the hazards that can potentially impact them, what vulnerabilities are present that increase their chances and the degree of impact, and their adaptive capacity, or actions they can take in order to be resilient in the wake of such events.

The *National Science Foundation* of the United States, through the *Natural Hazards Center*, funds small quick response grants for research immediately following hazard events and disasters. These grants are often used to further research on public perceptions of risk and risk reduction.

The *International Federation of Red Cross/Red Crescent Societies* sponsors young research and action by young professionals in developing and emerging economy countries. This research, administered through the *ProVention Consortium*, supports many innovative public risk awareness projects and community-based promotion of risk reduction. Some projects help develop risk assessment capacity or study the effectiveness of current risk awareness and risk reduction education programmes.

Simulations and drills

Civil defence and other ministries have also used community meetings, mock evacuations and disaster drills as a means of raising awareness. During recent earthquake drills across Japan, exercises included the evacuation of tourists and commuters in Tokyo using watercraft. A presidential address and media discussion following this event helped leverage wider public awareness. Mock evacuations in Italy have been carried out, notably on Mt Vesuvius. One such effort in Italy practiced evacuation of elderly residents of nursing homes, helping responders, home staff and residents to practice evacuation of this special needs population. Mock evacuation drills in Iceland are preceded by a promotional campaign and well-attended community meetings to discuss hazards, probable losses and emergency procedures. Evidence following these meetings suggested high hazard awareness. *The Earthquake Country Alliance*, a public-private partnership, is planning a large-scale effort in Los Angeles, California which will include not only response exercises for service personnel and administrators, but a widespread awareness campaign in schools, in the media and on the internet.

Mock evacuations and drills can be an engaging method of raising risk awareness across a wide cross-section of the population. Drills in schools are a basic way of sensitising children to risks. Fire, earthquake and general evacuation drills at school are common in most regions within the countries assessed.

It has been well-researched that practicing response skills regularly is significantly responsible for protective action during an emergency. Public inclusion in simulations and drills can also stimulate people to consider their own risk and preparedness. Despite this, mock evacuations and drills tend to focus public attention on protective actions people should take during a hazard event and emergency response. These exercises often do not highlight risk reduction steps that can reduce losses *a priori*, and may even convey the wrong

impression that response preparedness is synonymous with risk reduction. To capitalise on the extensive resources used for such mock events, increased public risk awareness and reduction education should be in place both prior to and following these drills. Media coverage should also be drawn towards the benefits of preventative actions which minimise the need for emergency response.

Informational websites

All countries surveyed had some risk awareness and preparedness information on governmental websites. These websites were typically located in ministries of civil defence or protection, emergency response or in agencies tasked with forecasting, measurement or research on the biophysical forces responsible for natural hazards.

Websites often display a slant towards the mission of the agency under which they are housed. Websites housed in civil defence and response ministries often focus heavily on event response and emergency planning for post-event preparedness. Some, such as *Spain's Civil Protection Agency* website, have links to access national documentation of disasters, hazard information, agreements and plans. Easy access to these types of documents can support and enhance risk awareness and reduction education of local government agents and decision makers. Websites linked with forecasting and scientific research contain high quality and accurate information regarding hazards, though occasionally are too technical to be useful for the general public or administrators.

In Japan, local fire departments offer fire prevention materials and protective advice for earthquakes. Some websites, such as *Mexico's Civil Protection Agency* website, also have up-to-date bulletins about developing natural hazards such as tropical cyclones, severe weather and volcanic activity. Some websites, such as *Italy's Civil Protection Ministry* and the *British Columbia Provincial Ministry* in Canada have interactive pages specifically geared towards children (Obonsawin 2007). New Zealand's *What's the Plan, Stan?* and the United States' *Ready Kids*, each out of their respective civil defence units, are notable examples of a well-thought out and thorough child-centred risk awareness and risk reduction education programmes. These programmes promoted youth learning through the use of animal mascots and engaging games.

Most websites linked to civil protection, emergency response and forecasting also have some information on individual and household actions. Yet, this information is often underdeveloped. Material on how to reduce risk at the individual, business and community level is often cursory and consists of a generalised list of bulleted actions. These bulleted lists are often not integrated with appropriate and specific risk awareness material or descriptions of risk reduction effectiveness, both necessary components of effective risk reduction education. Unfortunately, some websites continue to promote civil defence and emergency response as the primary focus through text and pictures, rather than focusing on reduction activities aimed at preventing or lessening the impact of natural hazards.

In cases where governments have mandated public education and outreach, the quality and quantity of risk awareness and reduction education material is significantly greater. Many agencies in the United States have mandates regarding funding for public education and dissemination of research findings.

Many of these websites are devoted specifically to education and awareness material that targets a range of audiences including children, minority language speakers, policy makers and knowledge disseminators. In New Zealand, national agency websites dealing with natural hazard risk include significant public education information for adults and children. Their *National Institute of Water and Atmospheric Research* includes pages on climate change, its affects on weather in New Zealand and steps the public can take to reduce greenhouse gas emissions. However, even these campaigns often miss opportunities to better explain community level risk reduction strategies, such as building code regulations, land use planning, insurance and mandatory mitigation.

Several public sector informational websites offer advice to travellers about political conditions, health threats and current crisis in foreign countries. Some countries such as the United States and Canada also provide information on natural hazards, though little is given on pre-trip preparedness or risk–wise behaviour. The United Kingdom's *Know before You Go* campaign is a notable exception. Though focused on accidents and personal safety, it uses television advertisements and website information to promote travel insurance. Other links on the foreign office site give specific information about natural hazards. A privately developed website, *How Prepared are You,* developed by a geography teacher in England, educates children travelling abroad with their families.

Some countries such as Italy and Iceland are currently developing educational material for tourists. In these countries, pamphlets and signs explaining local hazards, early warning and evacuation procedures are located in high tourist areas and translated into multiple languages. Just as many governments require fire escape information in hotel rooms, countries can also require similar information for other risks in regions of high natural hazard risk.

Risk mapping and assessment

Many countries assessed had performed hazard and risk mapping. These risk maps and assessments are crucial tools for urban planning and emergency response. There is often strong public and governmental support for creating hazard and risk maps after extreme events, such as the initiation of new flood risk mapping in the United Kingdom following the 2007 floods (Pitt 2007). In addition to their utility for policy and response, risk mapping can also serve important risk awareness and risk reduction education tools.

When well publicised, risk maps and assessments can be tools for raising risk awareness among policy makers and the public. When properly disseminated and explained, these maps can help the public and local policy makers better understand risks. The maps can also help better explain risk mitigation prioritisation. For example, risk maps can increase understanding about the allocation of flood defences or land use restrictions or expense allocations for infrastructure strengthening.

In Canada, Iceland, Japan, the United Kingdom and the United States, national and local public agencies have developed natural hazard maps and made them available to the public through the internet. Map Modernization, a multi-year United States initiative to update flood hazard maps, is making digital maps available to the general public. Local jurisdictions are also developing risk maps by combining the hazard maps with infrastructure, settlement, and demographic information. In the United States and the United Kingdom, policy makers and the general public can retrieve flood hazard maps

by town or postal code through the *Floods.gov* and the *Environmental Agency* website respectively. The United States' National Oceanic and Atmospheric Agency has also recently created an interactive web mapping tool for Hawaiian residents to view tsunami risk maps for their individual addresses.

In New Zealand, risk modelling is being carried out through public and education sector partnerships and results are also publicly available. Detailed microzonation maps of seismic hazard and infrastructure vulnerability have been developed for major urban areas of Turkey and are available on municipal websites and through published reports (Turkmen 2007). The *University of Iceland* and the *Icelandic Meteorological Office* have developed detailed avalanche risk maps that itemise annual individual avalanche risk by geographic location. In order to explain avalanche risk zoning to the public, the maps are accompanied by comparisons with other common societal risks (Arnalds, Sigurodsson, and Jonasson 2004). In Portugal, while hazard mapping has been conducted for wildfire, flood and seismic risk, this information is mainly available to public agencies associated with managing the hazard. Italy regional administrations are currently engaging in a multi-year, multi-hazard risk mapping process that maps hazards overlaid upon infrastructure and human exposure. A public education component may be included near completion of the project.

National level risk mapping can be a process that raises risk awareness among the general public and local administrations. In Canada, a regional programme has developed the *Hazard, Risk and Vulnerability Tool,* available on-line, to guide local agencies in community risk mapping and response preparedness.

Disaster parks and museums

In many countries, locations of past disasters and sites of visible geophysical hazards are effectively being used as risk awareness tools. A mangled bridge destroyed in an Icelandic flash flood has been turned into an outdoor exhibit; a major fault scar in China is planned as an outdoor earthquake museum. A similar such visible fault in New Zealand has become a walking trail and interpretive earthquake park after development was denied by the local tribunal. The museum commemorating the eruption of Mt. Vesuvius in Italy is world-famous for its graphic depiction of the potential for catastrophic loss in the vicinity of active volcanoes.

While interpretive sites are often limited in geographical impact, appropriate sites are plentiful in most communities and can be an immediate and local reminder of hazards and risk reduction. Educational sites can be incorporated into areas where land use regulations restrict development due to natural hazard risk. They can help reinforce the necessity and importance of zonation laws, a risk reduction strategy often not well understood by the general public. To be effective, they should include not only easy to understand descriptions of the hazard, but specific strategies for reducing risk at the individual, household and community level.

Museums can also be effective tools for risk awareness and risk reduction education. The *Shizuoka Prefectural Earthquake Preparedness Education Center* in Japan teaches visitors about earthquake risk and secondary risks such as tsunami and fire that may be triggered by earthquakes. The centre has interactive rooms where visitors can experience a simulated earthquake, watch a model tsunami, and use fire extinguishers to put out images of fires. The

activities and educational material are presented in a way that both entertains and educates, promoting individual and collective action to reduce risk.

Online museums sponsored by the national government can help extend the reach of natural hazard museums, targeting youth and others with internet access. *Awesome Forces*, an online educational resource for children, produced by the Museum of New Zealand, and the *Virtual Earthquake Museum of China* both have engaging games, historical lessons, quizzes and other material to raise natural hazard risk awareness and teach risk reduction measures. The *Shizuoka Prefectural Earthquake Preparedness Education Center* extends its impact through an engaging museum website, including videos that show visitors experiencing many of the museum's interactive activities.

Training courses

Low and moderate income countries, such as India, Mexico and Turkey, often have additional challenges when implementing risk awareness and risk reduction education due to high levels of unauthorised construction. Risk awareness and knowledge of hazard resistant construction among construction workers, self-builders, and construction professionals is a crucial aspect of risk awareness and risk reduction education in these countries. In India, the *National Programme for Capacity Building of Engineers and Architects in Earthquake Risk Mitigation* has trained 20,000 professionals in seismic resistant construction and new building code requirements. The *Indian Housing and Urban Development Cooperation* and the *Ministry of Rural Development*, as well as non-governmental agencies, have instituted mason training programmes (Kuberan 2007). Seminars and courses within trade schools have been piloted in Turkey (Petal *et al*. 2006). Both countries have posters that teach risk reduction techniques to rural and urban poor whom are likely to engage in informal construction. They have also instituted certificate training courses for construction workers in some areas.

Extensive funding from international aid organisations has also helped to support community-based disaster planning at the village and local self-government levels in tropical cyclone and flood prone regions of India (Kuberan 2007). These local planning initiatives help to raise awareness of hazard risk reduction and response strategies, building local capacity to manage emergencies.

In most countries surveyed, civil defence, emergency response and other disaster related ministries offer training courses aimed at improving risk awareness, risk reduction and emergency response. These programmes are often targeted at emergency response personnel and local civil protection jurisdictions rather than the general public. While these programmes can effectively improve risk awareness and risk reduction education among professional and volunteer response personnel, they are beyond the scope of this report.

In several countries, civil defence agencies or fire departments offer *Community Emergency Response* courses lasting between 12 and 30 hours for community volunteers. These often begin with basic risk awareness and risk reduction education, teach life-saving non-medical triage, fire suppression, and organisation skills for response. Trainees become ancillary to professional responders. They build response capacity, and successfully convey the importance of communities developing resilience and helping themselves following a disaster, often leading to community-based risk reduction planning.

There is a strong spirit of volunteerism in these programmes, and collaboration with both civic and private sectors has proven indispensable. Trainees often become engaged in further community-based education and risk reduction planning. While costly, these programmes can produce strong community advocates for risk awareness, risk reduction and response preparedness.

The education sector and cross-sectoral partnerships for school education

Educating children about natural hazards and risk reduction is of significant importance. Research conducted by *State Farm Insurance* found that people were very likely to take action when their children came home from school and told them they had to do it (Harvey 2007).

The task of infusing risk awareness and risk reduction education into curricula is a multi-decade effort. It begins with elaborating the scope and sequence and competencies expected at each age level and undertaking a full curriculum audit in all subjects to identify the appropriate insertion points. Textbook revisions, development of supplemental teacher training material, introduction of the subject matter through teacher-training colleges and in-service training plans are the subsequent steps for full integration. While advocacy for full infusion is underway in some countries, none have achieved this yet (for a more extensive survey of risk reduction education in schools, see BRI and GRIPS 2007; UNISDR 2007; Velicer *et al.* 2006; Wisner 2006). In the meantime, most countries have taken the approach of supplementing curriculum with regional and national co-curricular education developed by civil protection agencies or civic organisations, often in conjunction with wider public education campaigns.

China, India, Mexico, New Zealand, and Turkey have co-curricular risk education in regional or national curriculum. Japan also has co-curricular risk education in some schools, though it has been removed from the national curriculum.

In China, nearly 500,000 textbooks on natural disasters and mitigation have been produced for elective high school geography courses. The textbook covers characteristics and impacts of natural hazards in China, hazard monitoring, mitigation, preparedness and disaster relief. India's Central Board of Secondary Education, one of the largest boards in the country, integrated risk awareness and preparedness into social and environmental science curricula in 2004; the upper level geography track also introduces disaster management principles. Some Indian states which have recently experienced severe disasters have also initiated their own state-level curriculum (BRI and GRIPS 2007; Kuberan 2007). In Mexico, environmental awareness, the interaction of humans and the environment, and disaster risk reduction and preparedness are taught in secondary school geography classes. As part of these studies, students participate in risk mitigation activities in their communities.

Box 5. School education programme approaches

Masters of Disasters, developed by the *American Red Cross*, and *Expect the Unexpected,* developed by the *Canadian Red Cross*, are financially sponsored by the insurance industry. These curriculum kits support risk awareness, reduction and preparedness for primary and middle school children and are aligned with education standards in math, science, language arts and social studies. For younger students, lessons in language arts may encourage students to brainstorm about risks and risk reduction strategies. Students in secondary school prepare news reports on disasters and the positive effects of risk reduction for imaginary towns experiencing natural hazard events. Lessons in math and science incorporate hurricane tracking and flood depth measurement calculations into lessons on reading maps and charts. Risk awareness and reduction education is not mandatory in either country's curriculum and, thus, use of this material varies widely.

In Japan, children are also encouraged to learn about disaster risk reduction. *The General Insurance Association of Japan*, in collaboration with civic organisations, gives grants to schools and communities for children to carry out neighbourhood safety inspections. *The Challenge Plan* also gives grants to 15 schools or organisations each year to support risk awareness and reduction education. *Kodomo Bousia Koushien*, a national contest, gives awards to children each year for learning about and engaging in disaster risk reduction. School response and evacuation drills are also mandatory.

New Zealand has a mandatory risk awareness and risk reduction education national curriculum. Developed by the *Ministry of Civil Defence and Emergency Management* with the support of teachers, the 2006 *What's the Plan Stan?* curriculum targets primary and intermediate school children. The curriculum teaches risk awareness and risk reduction by highlighting four "R"s of emergency management: reduction, readiness, response and recovery. Lessons feature activities, stories, and historical information using five children and a mascot dog who model what to do before, during, and after earthquakes, tsunamis, volcanic eruptions, storms, floods and other emergency events.

New Zealand currently has one of the most extensive national curricula for risk awareness and reduction. Civil defence and emergency service personnel are responsible for developing and delivering community safety programmes in primary and intermediate schools. Curriculum and initiatives for these programmes are produced by national level committees and are well supported by resource materials. The programme increases its impact by encouraging students to talk with their parents about natural hazard risks and preparedness. In Turkey, teachers voluntarily participated in web-based training courses and select teachers became master-trainers in basic disaster awareness. Select trade and high schools have followed similar programmes for more advance risk mitigation education (Turkmen 2007). While Turkey's programme has not become institutionalised through annualised outreach to new teachers, the programme maximises impact by encouraging trained teachers to provide education seminars not only for students, but for staff, parents and the wider community (Petal *et al.* 2006).

Mandatory risk education was removed from the Japanese national curriculum in 1951 due to concerns over declining achievement in other subjects. However, most schools have hazard drills and teach disaster risk reduction in this context. In a recent study 80 percent of the high schools in 5 prefectures of Japan had participated in disaster education (Shaw 2005). A small

percentage of schools in Japan have also been recognised as pioneer schools in disaster risk reduction, teaching risk awareness and reduction education integrated into their comprehensive studies time slots (Shiroshita 2006; Shiroshita and Kawata 2007). Extensive materials for disaster awareness and risk reduction have been produced by municipalities, prefectures, engineering and scientific institutions and the *General Insurance Association of Japan* (discussed below).

Some countries are currently considering adding risk awareness and risk reduction education into their educational mandates. In the United Kingdom, integration of hazard awareness and risk reduction is being discussed as part of a new citizenship curriculum. Segments of this citizenship curriculum may draw upon innovative risk awareness and reduction education in geography lessons developed by a secondary school teacher. These lessons ask students to learn about hazards in their neighbourhood, country of origin or holiday destination, create educational videos and help their families better prepare for natural hazard events.

In other countries such as Canada, Italy, the United Kingdom and the United States, teaching material for risk awareness and risk reduction education in the schools is implemented on a voluntary basis. In the United Kingdom, the *Meteorological Office* has developed multi-media resources that explain weather related hazards, including flooding and climate change. These materials are freely available to citizens, teachers and students and are compatible with primary and secondary school geography curriculum. This curriculum includes activities on reading flood risk maps, calculating the number of buildings damaged during various flood events and explaining the causes of flood disasters.

In the United States, the *American Red Cross* has developed interactive risk awareness and risk preparedness education modules for primary and secondary schools with funding from the *Allstate Foundation*. This curriculum is aligned with some state-level education standards for science, math, language arts and social studies. Schools can order material from local Red Cross societies and work with them to implement this material within schools. Approximately half of the 756 local Red Cross chapters have implemented this programme in schools within their community, reaching 5.2 million children in six years.

The Canadian provincial government of British Columbia has also produced and distributed local grade-appropriate earthquake preparedness teaching aids, in addition to the national *Expect the Unexpected* school programme developed by *Canadian Red Cross* with support from *State Farm Insurance* and the *Weather Network*. While providing excellent education curriculum content, the voluntary nature of these programmes has meant that penetration varies greatly across school districts, regions and over time.

The *Italian Civil Protection Agency* is developing an interactive web-based programme for primary school students, *La Protezione Civile per i Piccolo*. The *Civil Protection and Emergency Agency* of Spain also has a website that contains a large amount of reference material on flood and seismic risk. In Portugal, educational material to support teachers when educating about natural hazards is currently being developed.

As evidenced through this stocktaking, a large quantity of education material on risk awareness has been produced during recent decades. Much of this innovative material continues to place significant emphasis on hazard

identification, risk awareness, drills and emergency response. It often fails to adequately integrate this material with risk reduction education, a necessary component for encouraging wider adoption of risk reduction strategies and financial protection across society. Many programmes miss opportunities to introduce students to land use planning, building codes, financial pooling of risk and risk-wise environmental stewardship as means of managing and reducing disaster risk.

Much of the education material for schools has been primarily developed by civic, private and public agencies with limited collaboration with regional or national education boards or ministries. Material that conforms to national education standards is easier for teachers to integrate into their teaching schedules. However, this approach typically relies on enterprising teachers, thus significantly limiting penetration. Many teachers are understandably unwilling or unable to integrate this material into already full teaching programmes. They may not feel confident enough in the subject to teach it to their students, especially when student performance in other core subject material is heavily scrutinised. Support from teachers' unions, education ministries, and official mandates can help to fully integrate risk awareness and reduction education into school curricula, developing a culture of safety within the next generation.

At the university level, natural hazards awareness, risk reduction, risk mitigation and emergency management is taught through certificate programmes in a wide variety of disciplines and in newly emerging disaster risk management programmes. Many countries also have research centres connected to natural hazard risk reduction and emergency management. Despite the often high quality of these programmes, risk awareness and planning are often not integrated into other university-level education tracks. Classes in risk awareness, risk reduction and emergency planning within business programmes, international development programmes, urban planning, and similar disciplines are rare, despite the important impact that natural hazard risk can play in these professional arenas.

Some examples of university-affiliated research centres that engage in extensive public education for natural hazard risk and reduction awareness are the *Kandilli Observatory and Earthquake Research Institute* in Turkey, the *National Information Center for Earthquake Engineering* at *IIT Kanpur* in India, and the *Southern California Earthquake Center* in the United States. At the international level, the *Global Open Learning Forum on Risk Reduction (GOLFRE)* offers an on-line certificate courses in disaster management for field practitioners of aid organisations.

The private sector and private sector sponsorships

The insurance sector

Several insurance companies and associations currently sponsor conferences, research and publications on issues related to provision of services and loss reduction. These programmes help raise awareness among policy makers, researchers, and technical experts in the field of financial loss reduction and can be crucial for developing sound natural hazard risk insurance markets.

The *Benfield Hazard Research Centre* of London, funded by one of the largest reinsurance and risk intermediaries, transfers natural hazard and risk research, practice, and innovation from the academic environment to business, government and international agencies. They have a notable education programme for insurers regarding natural hazards, including certified courses. Similarly, *Lloyd's*, a leading insurance provider, has developed *Climate Wise*, a framework to educate insurance companies internationally on how to incorporate climate change issues into their business operations. The *Institute for Catastrophic Loss* in Canada is a coordinated effort to reduce disaster loss involving member insurance companies, the University of Western Ontario and other partners. They promote research, as well as provide education of the public on natural hazards (Obonsawin 2007).

Programmes sponsored by the insurance sector have also improved hazard resistant construction practices in some countries. Sponsored research and advocacy can help persuade local and national governments to adopt stricter risk reduction measures (Alesch *et al.* 2004). The *Insurance Bureau of Canada* funds research on building resistance to extreme weather (Obonsawin 2007). Similarly, the *Institute for Business and Home Safety (IBHS)*, a non-profit organisation funded by major insurers in the United States, sponsors research on hurricane insurance claims, showing that improved building codes has reduced losses by 42 percent (IBHS 2004). *IBHS* has also lobbied for the inclusion of disaster-resistant features in model building codes and the adoption of such codes by local jurisdictions. Through a broad multi-sector *Fortified for Safer Living* programme, they have created disaster-resistant construction standards and authorised inspectors to review construction built to these higher standards for each region of the United States. The research, advocacy and public education outreach provided by these international reinsurers and national insurance consortia have provided significant sectoral leadership in developing and promoting physical and financial protection tools for catastrophic risk.

Many insurance companies and insurance consortia in the countries assessed provide innovative and engaging insurance education programmes for consumers and school children (OECD, fothcoming). Some of these insurance education programmes include natural hazard risk awareness and reduction education components. Dissemination methods include brochures, ad campaigns, workshops, websites, museums and school curriculum. For example, the *Insurance Bureau of Canada* provides free resources for the public and has a website to raise awareness of natural hazard risk and risk reduction measures (Obonsawin 2007). Mexico's *Comision Nacional de Seguros y Financieros* has organised *Safety Week* to promote awareness of natural hazard risk in primary schools and promote an "insurance culture" in Mexican society (OECD, 2008). The *National Association of Insurance Commissioners* in the United States includes some information on how natural hazards can affect insurance in their information for the general public. The *Association of British Insurers* provides general information on flooding and flood insurance on their website.

Following the 1995 Kobe earthquake, the *General Insurance Association of Japan (GIAJ)* realised there was a general lack of public knowledge regarding earthquake insurance and coverage mechanisms. They have promoted public understanding of hazard and insurance mechanisms through campaigns, elementary school programmes, posters, flyers and advertisements. In part due to their efforts, there has been an increase in earthquake insurance penetration from 33.5 percent in 2002 to 40.3 percent in 2006. These efforts are an important

component of public risk awareness. In countries where natural hazard risk is significant, insurance education programmes have considerable scope for improving awareness of natural hazard risk and risk pooling through insurance, reinsurance, risk bonds and other means.

Natural hazard risk and insurance awareness programmes are also found in nations that have mandatory or nationally sponsored catastrophic insurance. The *Turkish Compulsory Insurance Pool*, part of a new earthquake insurance scheme, has engaged in significant campaigns to raise public awareness of earthquake insurance, including celebrity advertisements and posters. While only modest penetration has been achieved, earthquake insurance in Istanbul has risen from 15 percent to nearly 30 percent in the seven years since the programme's inception (OECD 2005a). In the United States, flood insurance, which is provided through a public insurance programme, is heavily promoted through the *Flood Smart* website. The public can access information about flood insurance and checklists for hurricane preparedness. The *Consorcio de Compensacion de Seguros* of Spain is currently considering preventative campaigns to prevent and reduce losses due to natural hazards (OECD, 2008). Similarly, the *Associção Portugesa de Seguradores*, a Portuguese insurance association, is working with the government to develop an insurance system for earthquake risk. An awareness campaign targeting building owners is expected to follow the creation of such a system.

Box 6. Innovation in private sector risk awareness campaigns

The *General Insurance Association of Japan* identified radio broadcasters as crucial knowledge disseminators. Yearly, they host a risk awareness event for 100 radio presenters. The presenters first experience simulations of major disasters and emergencies, and then participate in lectures on topics such as disaster preparedness, tips to mitigate damage and earthquake insurance. The association asks the radio presenters to relate their experience and the knowledge they gain to their station listeners.

The *Institute for Home and Business Safety* in the United States has produced over a dozen videos for home and business owners that delineate steps to fortify buildings against common natural catastrophes. The Institute has developed voluntary improved construction standards and an inspector authorisation programme that incorporate construction techniques to lower losses from earthquakes, flooding, severe weather and wildfires. These standards help to reduce greenhouse gas emissions, energy-efficiency and material recycling, thus also addressing growing concerns about climate change.

Aksigorta, an insurance provider in Turkey, has created a Fire and Earthquake Training Centre in their headquarters for school children to learn how to protect themselves from these hazards and to promote insurance awareness in the next generation.

Insurance industry consortia have also been active in promoting broad awareness of natural hazard risk and risk reduction measures. *IBHS* directly targets the general public through campaigns, such as programmes that raise awareness of the role of building code inspectors and permit processes in ensuring public safety. *The Earthquake Commission* in New Zealand provides the brochure 'Quake Safe Your Home, a guide that teaches how to reduce damage and injury from home contents during an earthquake. *The Insurance Bureau of Canada* has information aimed at the general public regarding earthquakes, hurricanes, severe storms, and tornadoes on their website.

Some individual insurance companies give information regarding disaster risk reduction on their websites and in brochures. While an important first step, often this information is buried in the website and consists of no more than a bulleted list of risk reduction techniques.

In some countries, insurance providers and consortia have also been active in partnering with the public, civic and education sectors to sponsor risk awareness and risk reduction education. *State Farm Insurance*, partnering with the *Canadian Red Cross* and the *Weather Network*, has developed the programme *Expect the Unexpected,* which has reached over 750,000 children. The *Allstate Foundation,* a non-profit organisation established by a major North American insurer, helped sponsor the innovative *Masters of Disasters* curriculum developed through the *American Red Cross*. In the United States, *State Farm Insurance* gives grants to non-profit organisations who are educating home-buyers about catastrophe risk reduction, response preparedness, and disaster recovery.

Computer-based risk modelling and mapping has become a strategic tool for risk management within the insurance and public sector. This technology has the opportunity to reduce financial burdens that natural hazards have on insurance and reinsurance companies, governments, and the public. When disseminated in non-technical formats, risk management information also has the potential to increase public understanding of geographic risk variation and corresponding policy premiums. As was discussed above, public agencies are beginning to provide hazard and risk maps to the general public. Insurance consortiums have the capacity to follow suit. *The Earthquake Commission of New Zealand* provides public access to earthquake hazard maps on their website. Many other consortiums and risk research institutes are creating hazard and risk maps for use in the insurance industry. These maps could be adapted for use in public risk awareness and risk reduction education. However, for these efforts to be most efficient in encouraging the adoption of risk reduction strategies at the individual and collective level, they should be embedded within larger public education programmes that both explain risk maps in non-technical language and promote available and effective physical and financial protection strategies.

The insurance sector is taking initiative, largely without public funding, to promote and educate policy makers and private citizens regarding natural hazard risk and financial protection. Some have used these education opportunities to explain and promote land use and construction standards that will help reduce exposure to and provide physical protection from natural hazards. Others have partnered with civic and public organisations to create some of the most innovative and engaging public risk awareness and reduction education. There remains significant scope for additional efforts to routinise catastrophic risk awareness in consumer education programmes that currently cover non-catastrophic risks and improve the quality of risk awareness and risk reduction education material insurance agencies offer to the general public. This could include the wider dissemination of simplified hazard and risk maps.

The corporate sector

Forward thinking businesses and corporations are increasingly concerned about business continuity planning for natural hazard events. The *IBHS* offers *Open for Business: A Disaster Planning Toolkit for the Small and Mid-sized Business Owner*. The United States *Department of Homeland Security*'s *Ready Campaign* also

includes information on disaster planning and risk reduction for smaller businesses. The *Emergency Preparedness for Industry and Commerce Council,* a cross-sectoral partnership started by British Columbian business leaders, provides similar education materials for businesses in Canada. The national government of New Zealand funds the research group *Resilient Organizations* to research lifeline infrastructure and business organisations. The research builds tools and techniques for organisational and business continuity in the case of natural hazard events. The *Preparing for Emergencies Campaign,* developed by the United Kingdom Civil Contingencies Secretariat also provides information for businesses. The Central Disaster Management Council of Japan has published business continuity guidelines. Recent research estimates that the financial industry in Japan spends nearly one billion dollars on business resiliency per year. It should be noted that there are also many consulting firms that offer business disaster continuity guides, training and assessment.

A significant component of business disaster planning includes risk awareness and risk reduction education for managers and employees. In India, several chemical manufacturers such as *Siel Chemical* and *Tata Chemicals*, have hazard and preparedness seminars for workers, school children and local community members as part of their corporate good neighbour policies. Business efforts such as these often contribute to and build upon wider risk awareness and risk reduction education efforts.

In the wider community, the corporate sector is often involved in charitable giving following natural hazard events, but there is great potential for their further involvement in risk awareness and risk reduction education for the general public and their employees.

Some corporations are partnering with public and civic organisations to promote risk awareness and risk reduction education. *Home Depot, Inc.* and *Lowe's Companies, Inc.*, both large home improvement specialty retailers in North America, have funded in-store risk awareness seminars and promoted do-it-yourself products for home strengthening to reduce natural hazard risk. In the United States, *Home Depot, Inc.* has partnered with American Red Cross to give grants to local chapters of the Red Cross for disaster preparedness education and to support Red Cross disaster readiness efforts. This effort includes the ambitious goal of educating one million people in three years. On a smaller scale, *Praktiker Bau- und Heimwerkermaerkte AG*, has handed out risk awareness and risk reduction material in Turkish retail outlets. Also in Turkey, a two-sided Family Disaster Plan was distributed to millions of school children; hundreds of thousands of information cards also reached Istanbul residents through private sector sponsorship (Petal 2003; Turkmen 2007).

The engineering industry and some segments of the construction industries support many risk reduction initiatives, including strict and mandatory building codes, hazard-conscious land use planning and environmental stewardship as a means of encouraging risk-wise behaviour. The *Omaxe Foundation*, created by a leading real estate and construction company in India, has facilitated disaster resistant construction workshops and seminars throughout the country (Kuberan 2007). Likewise, members of the insurance industry often advocate risk-based insurance premiums to promote awareness of risks and incentives for risk mitigation and reduction. These strategies are often not well understood or supported by the public, given the potentially high insurance costs for individuals and businesses residing in high-risk hazard zones.

The civic sector and civic sector partnerships

The size of the civic sector, and its involvement in risk awareness and risk reduction education, varied greatly across the countries surveyed. Many civic sector programmes are cross-sectoral partnerships, combining the community-level focus of the civic sector with school programmes in the educational sector and public or private sector funding. Some civic sector programmes engage the strengths of women or children in risk awareness and reduction education (Petal *et al*. 2003; Plan 2007). The resulting programmes are eclectic and often effectively tailored to local needs and risk perceptions. While dynamic local initiatives exist in a host of locations, this stocktaking focused on large national or regional programmes engaged in risk awareness and risk reduction education.

Engineering and construction associations, such as the Earthquake Engineering Research Institute, the Japan Building Disaster Prevention Association, the Turkish Architects and Engineering Chamber and others are often active in educating their members about new research on hazards and infrastructure performance through training programmes, conferences and industry publications. Few of these organisations actively and consistently attempt to educate a wider general public about risk and risk reduction measures. There is much untapped potential for sustained partnerships with local grass-roots organisations to effectively disseminate scientific knowledge in a non-technical manner for the public.

The *International Federation of the Red Cross/Red Crescent Societies (IFRC)* and its affiliated national societies actively promote risk awareness and reduction education in almost all countries. The level of activity, however, varies considerably based on the primary mandate of the national society. In some countries such as China, Italy, Iceland, Japan, Spain, Portugal, New Zealand and the United Kingdom, activities predominately focus on first aid, safety, disaster and emergency response training. These core programmes are invaluable in reducing non-disaster related deaths and injuries and can strengthen community emergency response during disasters and catastrophes. However, they typically do not emphasize public awareness of natural hazard risk or risk reduction strategies as a means of reducing disaster related losses.

In 2007, the *IFRC* initiated the *Global Alliance for Disaster Risk Reduction* to place a major emphasis on disaster risk reduction in their national societies and local chapters. The *IFRC* plans to proactively incorporate disaster risk reduction into national society plans and strategies, train volunteers, and regularly track progress of these efforts. The *Global Alliance* will likely increase the level of risk awareness and risk reduction education programmes in all countries assessed. Already, many national societies have recently moved to include these efforts in their national strategies. Notable in this regard is the newly developed *Vulnerability and Capacity Assessments* for household, school, community and business sectors established and heavily used in Mexico and the rest of Latin America.

In Canada, Mexico, Turkey and the United States, local Red Cross/Red Crescent Society activities currently include public risk awareness and risk reduction education. In these countries, local chapters often offer personal disaster preparedness courses. These national societies have also formed cross-sectoral partnerships aimed at implementing risk education in the schools. Examples include the *Turkish Ministry of Education, Safe Living* unit for schools,

the Canadian *Expect the Unexpected* school education programme (Obonsawin 2007) and the *Masters of Disasters* programme in the United States. The *Mexican Red Cross Society* has also recently begun including risk awareness and risk reduction education. They promote hurricane preparedness through an extensive media outreach, have trained local chapters in vulnerability and capacity assessments, and have become a regional example. Training courses for community based disaster preparedness are also being currently developed by the *Indian Red Cross Society* (Kuberan 2007). Because the roots of the Red Cross movement are in humanitarian response, many of these programmes continue to emphasize response preparedness; risk reduction is a conscious and new addition to their outreach.

Box 7. An example of a cross-sectoral partnership

According to experts, cross-sectoral partnerships are one of the most effective strategies for raising public awareness and promoting risk reduction behaviour. In the United States, the Federal Emergency Management Agency's *Project Impact* funded pilot city initiatives for comprehensive disaster risk reduction. Unfortunately, these programmes were cut short when they had just begun to prove themselves. Seattle's *Project Impact* is a surviving success story that achieved the goal of effective risk awareness and reduction education for home and school structural mitigation through extensive cross-sectoral collaboration between the public, private, civic and educational sectors.

In Seattle, programme coordinators used national seed funding to create training seminars that started with clear, specific, and non-technical earthquake hazard information and ended with achievable risk reduction actions. The programme ensured that materials needed for the strategies promoted were available on the local market and that financial institutions offered incentives for home risk mitigation. *Project Impact* trained local builders in home strengthening and worked with local building inspection departments to develop permitting and inspection procedures. They also worked with lending institutions to offer special loan packages and lower interest rates tied to the home strengthening mitigation programme. Partnerships with local civic and business organisations ensured that their message reached home owners. With encouragement from *Project Impact* staff, local hardware stores provided short seminars and stocked materials for do-it-yourself home strengthening. The project included low-income and minority advocacy groups and worked with charitable organisations to offer free home mitigation for some low-income households. In the first 8 years, 500 local contractors were trained, more than 3,000 homeowners took part in the training programme and more than 700 building permits were issues for home retrofits.

Because the programme was supported by broad, cross-sectoral support and collaboration, when national seed funding ceased, *Project Impact-Seattle*'s home mitigation programme was already institutionalised. It is currently administered by the local office of emergency management in collaboration with local universities, building centres, building departments and the public school system. Currently 190 regional building departments are considering extension of the programme into their jurisdiction and the adoption of updated and consistent standards for home strengthening.

In some countries, large, independent civic organisations and public-civic partnerships addressing natural hazard awareness and disaster risk reduction have also emerged. The *IFRC*-hosted *ProVention Consortium* has developed and maintained the *Community Risk Assessment Network*, collecting and disseminating practical tools for vulnerability and capacity assessment. It has also supported several young researchers in developing countries in applied research projects in thematic areas that support public risk awareness, such as: identifying

enabling factors and incentives from disaster risk reduction, improving educational materials and curricula, and promoting risk reduction in response and recovery activities.

Some civic organisations have emerged in the aftermath of major natural disasters. Following the Kobe earthquake, the *Asian Disaster Reduction Center* in Japan was formed to sponsor international co-operation, research and learning towards improved disaster management. One of their public education efforts has been the production of a children's book to teach tsunami risk awareness and response. Following the Northridge Earthquake, the *Earthquake Country Alliance of Southern California*, a coalition of government agencies, research institutes and the *American Red Cross,* has developed a multi-faceted preparedness campaign, sponsored risk perception research, and facilitated major regional simulation exercises. Several civic organisations grew out of the Marmara earthquakes in Turkey and now have extensive regional and national grass-roots based training programmes for public natural hazard risk awareness, risk reduction, and community preparedness (Turkmen 2007). With significant funding and collaboration between public and private sectors, local civic sector initiatives such as these have been able to extend the scope and geographical reach to become major contributors to public risk awareness and risk reduction education (Petal 2003).

International and regional efforts and collaboration

International efforts to promote and support risk awareness and reduction education have centred on two major themes: disaster reduction through international development aid and efforts to raise risk awareness of national governments and policy makers.

Following major disasters, international aid and financial institutions have supported the development of improved disaster management strategies in China, India, Mexico, and Turkey. This assistance has often been aimed at capacity building and a movement from relief-centric disaster response to more holistic disaster management that includes disaster risk reduction and education at all levels of society. These public education campaigns and community-based disaster management programmes develop support for a national shift in disaster management, build local capacity for disaster risk management and reduction, and build public acceptance for stricter regulations and insurance programmes that may be instituted.

International efforts have also focused on improved risk mapping in order to raise awareness of national governments regarding the hazards affecting their countries. The *World Bank, United Nations, Inter-American Development Bank,* the *European Seismological Commission* and others have worked to synthesise risk maps for major natural hazards (Dilley *et al*. 2005; IADB 2005). Global risk maps created through these efforts have been useful for raising risk awareness among national governments and helping nations to compare risk levels. For countries with under-developed risk mapping capacity, these maps have also strengthened country level knowledge of natural hazards through cross-national information sharing.

At a smaller scale, international community development agencies and local non-governmental organisations in countries such as Mexico and India have also promoted public risk awareness through community risk and vulnerability mapping using techniques from participatory rural appraisal and newly

developed hazard and vulnerability assessment tools. Some of these funds support risk reduction education efforts that are more innovative than typical programmes found within the sponsoring countries.

The UNISDR, a system comprising UN agency partners, national platforms for disaster risk reduction, and thematic platforms, works through biennial Global Platform meetings to implement the *Hyogo Framework for Action 2005-2015*, adopted by 168 countries at the World Conference for Disaster Reduction in 2005. To help guide countries in the implementation of the five priority areas for actions, UNISDR, in consultation with organisations and individuals from dozens of countries, published *Words into Action: A Guide for Implementing the Hyogo Framework* (UNISDR, 2007). The *Guide* provides specific advice on how to improve risk information and early warning and build a culture of safety and resilience, two of the priority areas for action in the *Hyogo Framework* that touch upon risk awareness and risk reduction education. The *Guide* provides terminology, outlines recommended steps for implementation, identifies responsibilities for action and required resources, and provides illustrations of implementation and avenues for further reading.

As mentioned earlier, Priority Three of the *Hyogo Framework* is "To build a culture of safety and resilience at all levels through the use of knowledge, innovation and education." In order to pursue this priority, a global Thematic Platform on Knowledge and Education of committed partners collaborates on international and regional work plans, sharing information, strategies, good practices, and promoting innovation and institutionalisation of disaster risk awareness and risk reduction education for children and for the public. The Disaster Risk Reduction Begins in Schools Campaign (2005-2007) highlighted these issues, reaching out to policy-makers and opinion-leaders with concerted efforts by UN and other international agencies, national government and civic sector partners.

The UNESCO-led *International Decade of Education for Sustainable Development* incorporates risk awareness and risk reduction education in its programme and is expected to continue this focus. The Council of Europe's *European-Mediterranean Major Hazards Agreement* (EUR-OPA) also maintains risk awareness and risk reduction education as an ongoing focal area, bringing together 25 member states to build a culture of safety through information exchange, awareness, education and training (Europe 2005, 2006). Similarly, in Asia, the *Asian Disaster Preparedness Center* currently works with 26 countries participating in the Regional Consultative Committee on Disaster Management's Mainstreaming Disaster Risk Reduction into Development programme. The programme has been drafting guidelines for “Integrating Disaster Risk Reduction into School Curriculum" (ADPC 2007). In the Americas, the Organization of American States promotes strategic planning for public awareness through its *Eduplan Hemisferico* initiative, and in Mexico is collaborating on a pilot school safety campaign with Earthquakes and Megacities.

3. Conclusion and next steps: The role of risk awareness and risk reduction education in building a culture of safety

3.1 Conclusions

Human decisions about where and how to live can lay the foundation for a society resilient to catastrophes. Public awareness of natural hazard risk and risk reduction measures forms the foundation and pre-requisite for effective natural catastrophic risk management and disaster risk reduction. In this vein, the Advisory Board of the *International Network on the Financial Management of Large-Scale Catastrophes*, set up by the OECD, has notably agreed that risk awareness initiatives constitute one of the key components of appropriate and sustainable financial management of large-scale catastrophes. This current stocktaking effort, in combination with OECD studies on financial education, builds upon national and international efforts to increase risk awareness and risk reduction education as a tool for catastrophic loss reduction.

Current research on risk awareness and risk reduction education, as well as the stocktaking of 11 OECD countries, China and India, suggest innovative strategies for using public education as a tool for catastrophic loss reduction. This work shows that risk awareness and risk reduction education messages should provide specific details on how to reduce risk and financial exposure, inform people about where to seek further information, be presented through a variety of media and trusted sources, and be frequent and consistent (Mcclure 2006; Mileti *et al*. 2004). Most successful are the efforts that create broad, cross-sectoral partnerships. These partnerships provide public information and educate policy makers in parallel with wider efforts to provide trusted, affordable and effective risk reduction tools for voluntary adoption and policy changes that incentivise or mandate behaviour change. These efforts, moreover, are most successful in countries where there has been a sustained and a long-term strategy for raising risk awareness and promoting risk reduction.

Box 8. Towards a culture of safety

Support for disaster risk reduction policy implementation may become widespread in areas where risk awareness and risk reduction education have been consistent, even when individual preparedness may remain low.

Research conducted in California shows that while residents reported low levels of personal preparedness, over 70 percent of residents supported policies for strict building codes, restrictions on home construction, and government funding to preserve and restore wetlands for flood protection. Support for building codes did drop from nearly 90 percent to 65 percent when respondents were informed of a 6 percent construction cost increase, but remained remarkable high (Miller 2006). This type of public support for mandatory risk reduction policies is the result of extensive regional awareness and education campaigns and is crucial for effectively implementing risk reduction policies.

Long-term strategies for risk awareness and risk reduction education that work within and across the public, education, private and civic sector can **encourage voluntary risk reduction activities** and build understanding of and compliance with mandatory measures. Risk awareness and risk reduction education in compulsory education curricula should form a key component of this effort. Also important are large-scale campaigns that use consistent and

engaging messages which include local risk identification and promote specific and practical risk reduction and preparedness strategies. Like other successful national and global campaigns, risk awareness and risk reduction education campaigns will need to be part of a long-term strategy for disaster risk reduction, a strategy that seeks to raise public awareness of the most important local hazards through as many communication channels as possible.

Despite the importance risk awareness and risk reduction education programmes can play in encouraging voluntary adoption of risk reduction strategies, these programmes may be insufficient by themselves. Without financial incentives and some compulsory policies for risk reduction, some individuals and communities will continue to put off adoption of these measures or decide that risk reduction is not a high priority. As such, risk education is often a **complementary part of larger national risk reduction strategies** that mandate and enforce risk reduction through land use planning, construction standards, evacuation planning, catastrophe insurance and emergency response. Education can ensure that local policy makers and the general public understand the role of such measures and build majority acceptance for any restrictions these policies bring to daily life.

Governments, in partnership with the private, civic and education sectors, have a fiscal and social responsibility to current and future generations to raise awareness of current and emerging catastrophic risk and educate the public on risk mitigation and reduction strategies. Through a sustained and long-term effort, they will encourage voluntary and compulsory strategies that reduce physical and financial exposure to natural hazards. Such education efforts are a key component to promoting a culture of safety within a nation's borders and beyond. Risk awareness and risk reduction education is a foundation and pre-requisite for effective catastrophic risk management and disaster risk reduction.

3.2 Possible next steps for the OECD

This stocktaking of risk awareness and risk reduction education programmes and policies in 11 OECD countries, China and India, serves as an initial step towards developing effective policies for risk education as a key component of national risk reduction strategies. To extend this initial assessment, the following projects may serve as useful actions:

- **In-depth country-level assessments.** This would involve taking stock of previous and existing country efforts and good practices in risk awareness and risk reduction education. A more thorough in-country assessment is warranted to identify the overall strengths and opportunities for improvement within each country.
- **Broader assessment of innovation in non-OECD countries.** Many low and middle-income countries outside the scope of this assessment are engaging in innovative and effective risk awareness, risk reduction education and community-based risk assessment and management. Lessons learned in Iran (Izadkhah 2005), Nepal (BRI and GRIPS 2007; Shiwaku *et al.* 2006), and other countries have significant implications for improving risk awareness and risk reduction education within OECD countries. While school-based risk education programmes have been thoroughly covered as a result of UNISDR's recent efforts (UNISDR 2007;

Wisner 2006), public, civic and private sector initiatives are less well documented.

- **Assessment of the effectiveness of risk awareness and risk reduction education campaigns.** The effectiveness of risk awareness and risk reduction education programmes within OECD countries could benefit from a more thorough evaluation. An important first step may be the development of a common framework for evaluating the effectiveness and penetration of risk reduction education programmes and campaigns. This work could gain from synergies with likely future OECD work on the evaluation of financial education programmemes.

- **Cross-country survey of risk perception and insurance penetration.** Insurance offers a crucial financial loss reduction tool, yet penetration is often low even in countries with compulsory insurance schemes. Further research and comparison is necessary to understand how risk awareness and penetration rates vary and how both policy and risk awareness programmes can improve insurance penetration.

4. Policy recommendations for enhancing natural hazard risk awareness and risk reduction education

The international consensus around the *Hyogo Framework for Action*, global efforts such as the new International Decade for Education for Sustainable Development, risk reduction research, the OECD project on enhanced risk awareness and the OECD Network on the Financial Management of Large-Scale Catastrophes all point to the imperative need for enhancing natural hazard risk awareness and risk reduction education in the general population.

Box 9. Innovation and creativity

Recent promotion of disaster risk reduction has resulted in the development of several new and engaging risk awareness and risk reduction awareness games.

- Hurricane Strike! developed through the United States National Weather Service, is an interactive computer game that teaches youth about hurricanes and hurricane evacuation steps. Players must advise "Aunt Betsy" of the best order in which to carry evacuation tasks. Monologues help guide students and give concrete explanations of reason for each step. This game has been used in classrooms and on news channel sites in areas of high risk.

- The virtual Earthquake Museum in China includes interactive games on earthquake response and information on a range of topics, including basic hazard awareness, Chinese seismographic history and earthquake risk management. Information is engaging and accessible for children and adults with access to the internet.

- A Non-Structural Mitigation Table-top Model developed in Turkey has been used for hands-on demonstration of how to fasten furniture to prevent falling, sliding and colliding in an earthquake. The model has been enthusiastically replicated in Kazakhstan, Uzbekistan, and Tajikistan, and localised for application in India.

Long-term, sustained risk awareness and risk reduction education programmes can encourage wide-spread voluntary adoption of simple risk

reduction strategies, and limited adoption of more costly measures. It can also build public and political support for complementary risk reduction strategies that mandate and enforce risk reduction through land use planning, construction standards, catastrophe insurance and institutional emergency response. **As part of a broad national risk reduction strategy, risk awareness and risk reduction education can strengthen public support for, and engagement in risk reduction at the national, regional, and local level.**

4.1. *The role of key stakeholders in promoting risk awareness and risk reduction education*

National governments are in a position to provide the needed policy-level guidance and leadership in risk awareness and risk reduction education. As part of an extended and sustained effort, the following steps may help to raise public risk awareness and reduce natural catastrophic losses:

Promotion of cross-sectoral collaboration

Disaster risk awareness and risk reduction education has been especially effective when representatives from the public, private, education and civic sectors collaborate together. In order to involve these many stakeholders, cross-sectoral platforms such as disaster risk reduction task forces can promote a collaborative process for the creation, implementation and dissemination of risk awareness and risk reduction education programmes and strategies. At all levels, cross-sectoral collaboration can help develop processes for achieving broad consensus and ownership of disaster risk reduction mechanisms, a key component when educating the public and policy makers about disaster risk reduction.

Integration of risk awareness and reduction measures in compulsory education

Incorporating risk awareness and reduction strategies into school curricula is the strongest method for institutionalising the reach of these messages to the largest percentage of the population in perpetuity (BRI and GRIPS 2007; Davis, Hosseini, and Izadkhah 2003; Izadkhah 2005). What is learned in childhood becomes incorporated into collective knowledge and carried into future decision-making.

While innovative and in-depth school education materials have been developed in many countries, several of these have only been piloted, rather than thoroughly integrated into national or regional curriculum standards (Izadkhah and Davis 2006). Formal curricula approaches have included infusion into existing courses at all grade levels, insertion of modules into existing courses, and supplemental stand-alone courses. Informal and co-curricular approaches have included special assemblies, drills, projects, competitions, festivals, exhibitions and performances. Development of leadership in teacher training, targeting both education faculty as well as a programme for in-service training of existing teachers will support any effort at national risk awareness and reduction curricula. School risk awareness and reduction education cannot simply be tacked onto overloaded curriculum. Nor can over-taxed teachers be expected to research and develop new materials in a field which they have little

prior knowledge. Successful programmes have included both curriculum and teacher support materials and have formally incorporated these materials into national curricular guidelines. Moreover, some argue that the development of leadership in teacher training by targeting teacher-training colleges as well as in-service training of existing teachers can increase success.

The content of risk reduction and placement in school curricula is important. Historically, hazard awareness content has been placed in science and geography courses (Fredricks 2001; Lidstone 2005), but educators have noted important opportunities for integration in social studies, civics, life-safety, health or life skills courses, language and literature, and mathematics. More broadly, risk awareness curricula can support students and communities in learning skills to identify and reduce hazard exposure and vulnerability, even as these evolve. Impact can be maximised by including practical guidelines for risk-wise actions, problem-solving skills for risk reduction, and education on financial tools for risk sharing and protection.

Box 10. Integration into school-based curricula

In 2004, the National Text-book Authorization Committee for Primary and Middle Schools of China approved a text-book for senior middle schools on natural hazards. The book offers a thorough introduction to natural hazards in the world, with a more detailed focus on China, and includes a final chapter on preparedness and disaster risk reduction. The book also features a list of Chinese web sites that students and teachers can consult, including an excellent site maintained by the Chinese Science Museum. By 2006, there was a copy on every senior middle school student's desk (Wisner 2006).

Iran's national earthquake safety education programme is mandatory in schools, supported by a range of text-books and extended through posters and public awareness campaigns. Lessons are reinforced through a national earthquake drill day, an event widely publicised by the media.

Successful school programmes have integrated student learning with community risk preparedness programmes through learning extensions at home and the encouragement of child-parent and teacher-parent communication. This has been achieved through community risk mapping projects, community-based fairs and exhibits, publicized drills, and other community based projects.

Public risk awareness and risk reduction education can develop consciousness about the need for school and community-based disaster management planning. These education activities may also create citizens eager to participate in local and regional risk mitigation and planning.

National-level guidelines on public service message content

While multiple organisations and sectors can be encouraged to develop and disseminate risk awareness and reduction education materials, guidelines on important content will help limit confusion, conflicting messages and disinformation (Alexander 2007). Development of standardised material from which organisations can take and modify for their particular target audiences has proven successful in the United States. There, a Coalition of Organizations for Disaster Education that includes the American Red Cross, government and research centres, has developed standardised language, advice for readiness,

and reduction strategies (ARC 2007). The Ministry of Home Affairs in India has also compiled and prepared an extensive set of resource materials developed by various organisations and distributed them to the state governments for local language translation and dissemination (Kuberan 2007).

When trusted institutions collaborate in developing broadly accessible and high quality risk awareness material, widespread repetition of the same basic message throughout national awareness and educational material can be achieved. In developing national guidelines for risk awareness and risk reduction messages, care should be taken to include the perspectives of children, minority language groups, people with disabilities, the elderly, and those who have experienced disasters. This can help avoid the dissemination of incorrect, inappropriate, or simply ineffective guidelines to target audiences.

National risk awareness and risk reduction guidelines can also be used to counter common myths or develop new public messages. Yet care must be taken to ensure that new information disseminated is appropriate, accurate and will not need to be re-developed soon after dissemination. Following flooding in the United Kingdom, reviewers noted that the public relied heavily on older, less effective strategies such as sandbagging (Pitt 2007). In recent studies of United States preparedness guidelines, for example, two fifths of survey respondents indicated they would not or could not shelter in place in the way currently promoted but did have ideas for improving their own and their community's ability to protect themselves in a crisis (Lasker 2004). These examples clearly demonstrate the importance of testing the quality and accuracy of risk and risk reduction messages prior to their widespread dissemination.

Support outreach programmes to opinion-leaders and knowledge disseminators.

Increasing awareness of natural hazards and risk reduction is a daunting task made easier by prioritising the education of key knowledge disseminators and policy makers. It has been especially important to target opinion-leaders trusted by the public and well-known "champions" of safety issues who can promote awareness and education on a sustained basis.

People often seek out or receive risk related information from a small number of trusted sources. Studies in the United States indicated that the many would not trust public announcements about health hazards, but would instead call their doctors to receive information and advice about eminent hazards (Lasker 2004). Studies following the 1999 earthquakes in Turkey suggested that the public trusted search and rescue organisations over government officials and even scientists (Fi ek, Müderriso lu, and Özkarar 2001). Religious leaders, neighbourhood leaders, business managers, school principals, media personnel and others may be effective and trusted disseminators of risk and risk reduction information. It is important that these and other knowledge disseminators have heightened awareness of risks and reduction strategies and have easy access to further information.

Funding the development of education material and training specifically for respected disseminators has been a high priority for some national governments and other stakeholders. These programmes have paid special attention to tailoring the material to the culture and the role the knowledge disseminators play in society and to ensuring that the material is amenable to the ways in which knowledge disseminators engage the public.

Box 11. Targeting disseminators, opinion leaders and policy makers

Several regional, national and international initiatives target knowledge disseminators, opinion leaders and policy-makers for efficient and effective dissemination. This strategy may reduce the need for more costly campaigns targeting the general public by assuming that disseminators will educate large audiences independently.

- The United States *National Weather Service* funds the *COMET* programme as a means of providing education and training resources for the weather forecasters. Through strong email lists, ties with professional bodies, and an information rich web-site, *COMET* instructional materials are promoted to over 10,000 forecasters and concerned individuals. The instructional material is designed so that professionals can quickly access and incorporate risk information into local weather forecasts, news shows, and emergency briefs. Underlying this risk awareness programme is the realisation that the public most often seeks explanations of meteorological hazards and guidance regarding appropriate risk reduction behaviour from professional forecasters.
- Italian initiatives have helped raise awareness of natural hazard risk and risk reduction planning for government representatives and policy makers. The Metropolitan Municipality of Rome developed a network of capital city governments and facilitated multiple meetings to discuss capital city emergency management. A similar programme was later adapted for 14 national metropolitan areas. Emergency management courses were also held for public administrators in Lombardy and nearly a third of the city mayors attended. Plans to institutionalise mandatory attendance are underway. These programmes may help develop public sector leadership for risk awareness and reduction education within the jurisdiction.
- In South Asia, Duryog Nivaran South Asian Network for Disaster Risk Reduction, has developed *Disaster Communication: A Resource Kit for Media*. The kit includes information about natural hazard events and community vulnerability. It also promotes a more progressive approach to gathering and presenting news with the aim of stimulating risk reduction actions by policy makers and the public.

Community participation

Broad community engagement is vital not only in the civic sector where it is currently most prevalent, but also in private, public, and educational sector efforts (Twigg 2004; Zugman Do Coutto 2004). When communities have been invited to participate throughout the process of programme development and message dissemination, it has helped to avoid wasting valuable time and resources on inappropriate or ineffective efforts.

Extensive experience indicates that communities should be full participants in risk awareness and risk reduction initiatives. Least successful are efforts that interpret "participation" as the need for community approval of plans already developed (Izadkhah and Davis 2006). This token approach to community participation can create suspicion or hostility as people recognise co-optation. Care must be taken so that efforts to include communities do not become marred in political alliance-building or become seen as a means of extracting favours (Wisner 2006). Funding stipulations that require extensive community engagement are one method to promote more effective and sustainable risk awareness and risk reduction.

Past experience has shown that it is especially important to involve community members in risk education efforts when these efforts have been initiated by technical experts. Technical experts often need assistance communicating risk messages in ways that take into account factors that are important to targeted individuals and communities. Moreover, technical experts may not be well equipped to know what information is most sought after and which information will most likely lead to increased risk reduction behaviour (Gough 2000).

Grassroots initiatives

Many excellent risk awareness, risk reduction and advocacy programmes have begun with grassroots efforts rather than national initiatives (Alesch *et al.* 2004; Twigg 2004). These programmes are often more grounded in the local physical, cultural, economic and political context of a community than nationally developed programmes. Often these programmes are developed by or for vulnerable or marginalised members of a community. These are important not only for the content of the materials they have created, but the social networks on which they rely for dissemination. Much can be learned from these efforts (Victoria 2005).

Grassroots initiatives, while creative, dynamic and flexible, often lack the financial and human capital to sustain and expand their efforts (Gupta 2002). Endeavours to capitalise on the strengths of grassroots risk awareness and risk reduction through scaling-up of local programmes are most successful when grassroots organisations partner with governmental agencies, larger civic organisations or businesses. Partnerships such as these can be supported and enhanced as part of a holistic, top-down and bottom-up integration strategy.

Accountability and effectiveness through scientific evaluation

Very few of the risk awareness and risk reduction education efforts so far undertaken have been studied beyond consumer satisfaction. Both monitoring and evaluation of initiatives and efforts are essential to assure accountability and transparency, and will increase both public confidence and a broad-based stake in the outcomes. Monitoring and evaluation of current strategy for risk awareness and education can serve as a first step towards developing effective strategies and materials and as an assurance of the effectiveness of ongoing programmes.

Understanding the actual causes of deaths, injuries and economic losses from disasters in a particular location is an important aspect of risk education. Post-disaster investigations can be coordinated as part of national risk reduction strategies in order to determine whether losses result from infrastructure collapses, inappropriate evacuation procedures, breakdown of early warning systems, a lack of resources or skills, or inaccurate perception of risks. These investigations will support the development of better risk reduction tools and inform current risk awareness and risk reduction education efforts. Many institutions for higher learning and centres for risk management have the expertise to engage in post-disaster investigations and carry out studies of risk perception and risk reduction actions.

Box 12. Examples of community participation in risk awareness and reduction

Direct community participation in the development of hazard and risk reduction education material will lead to a higher quality of targeted products. The creation of very local materials (*e.g.* children's posters for their own community) can promote deeper questioning of, and engagement in, the material. It can also create a more thorough understanding, longer retention and implementation. School-based materials should explicitly involve parents.

Following the 2000 Gujarat earthquake in India, SEEDS, a local NGO, worked to increase rural community awareness of disaster resistant construction through a participatory approach to community education. Local builders helped construct two scale models of local buildings, one incorporating seismic resistant components and the other not. Community members helped label these components. Following construction, during a multi-village festival, the buildings were repeatedly rammed by local tractors. Villagers watched as the building with seismic resistant features withstood shaking and the other model collapsed.

Environmental awareness education in Mexico's secondary education geography classes seeks to educate students about hazards, identifying vulnerable sub-populations, and the importance of raising awareness about disasters. An important component of this education is allowing students to propose and participate in mitigation measures for risk reduction that are identified in their homes, schools, and communities.

In 2007 in La Paz, Philippines, geoscientists identified landslide risks to an elementary and a high school and several homes. Following community debates on what to do, the headmaster put the decision about whether to relocate to a vote. Broadly, the adults, concerned about requiring the children to travel to school, voted against relocation. The children, however, made an effort to educate the community and ultimately prevailed 2:1 in having their school relocated to a safer place (Plan 2007).

In Japan, subsidies are provided to community groups (Jishubo) for the purchase of emergency food and rescue tools. Jishubo members who accept this subsidy take part in government-sponsored disaster preparedness workshops (Bajek, Matsuda, and Okada 2007).

In New Zealand, remote communities have been invited to be part of the hazard mitigation process. Community member priorities and beliefs have become part of a technical report that became the foundation for mitigation. This approach enhanced awareness and community preparedness while also increasing alliances between professionals and the community (Gough 2000).

Following an evacuation drill, ranchers and farmers on the east side of the Iceland's Myrdalsjokul icecap stated that they will not follow the flood evacuation plan in an emergency. They are worried about leaving their livestock and are concerned about driving across the flood plan to reach the designated evacuation shelter. The Icelandic Civil Defence is working with the community to develop an evacuation plan that takes into account both governmental and local concerns.

Child-oriented non-governmental organisations such as *Plan International, Action Aid, Save the Children* and others routinely involve children in consultation and decision-making relative to risk reduction and sustainable development.

Box 13. Grassroots partnerships for disaster risk awareness and reduction

National education ministries and civil defence agencies are often in a strategic position to enhance the dissemination and institutionalisation of grassroots developed risk awareness material.

- In India the Gujarat State Disaster Management Authority partnered with SEEDS, a small non-profit organisation with expertise in community-based disaster risk management. Over the course of 3 years, they piloted a variety of strategies and tested materials before scaling up to a state-wide programme for teacher-training and curriculum support that will reach all school children, and provide a model for other states.
- In Indonesia the Coalition for Disaster Education is a public/civic partnership pioneering in developing materials and programmes for adults and children with strong prospects for scaling up as their experience grows.

Scaling-up and sharing

Fundamentally, developing a "culture of safety" is about building local, regional and national momentum for disaster risk reduction. Many pilot programmes have been successful and can be expanded through policies, guidelines, curricula, training programmes and mass material distribution that is scaled to reach the entire risk-exposed population. In larger countries and those with federally-organised governments, scaling-up may entail a colourful, but complementary patchwork of efforts.

Multi-level participation in strategic planning, educational and scientific workshops and conferences, broad publication of case studies and sharing existing material for adaptation contribute to bringing successful efforts at one scale to the attention of those working at other scales.

4.2 Effective tools to enhance risk awareness and risk reduction education

Past efforts to educate the public regarding natural hazard risk and risk mitigation have had mixed success. Those that have been most successful have followed a few key strategies:

- **Clear, consistent message.** Despite inherent uncertainties that exist in the understanding and prediction of hazards, people need clear, consistent and persistent messages to internalise information and move towards action. Inconsistent and conflicting messages from the scientific, governmental, or civic communities and the media can lead to confusion, wasted energy or apathy (Evans, Frick, and Schwing 1990; Whittaker 1986). A consensus message, from a broad array of trusted sources, can be crucial to effective risk education.
- **Non-technical language.** Complex information is most easily understood when described using every-day terms and concepts (Gupta 2002; Mileti and Darlington 1995). The public often needs new terms fully explained, easily recognisable landmarks, features, and boundaries on maps and logical and consistent symbols (*e.g.* indicating 'right' and 'wrong', danger

levels, etc.). Research suggests that the use of probabilistic language should be used with caution (Stone, Yates, and Parker 1994).

- **Promotion of both awareness and action.** Past research has shown that increased hazard awareness does not directly lead to adoption of risk reduction measures and financial loss pooling. Risk awareness and risk reduction understanding are more effective when paired. Educational material that stresses the effectiveness and feasibility of risk reduction actions also better supports the growth of a culture of safety (Lindell and Perry 2000; Mcclure 2006; Mulilis and Duval 1995).

- **Engaging format.** Without direct experience of a hazard event, many people do not independently seek out hazard and risk reduction information. Educational material that is engaging, attractive and interactive can catch and keep the public's attention. Innovative strategies such as games, toys, models, videos, experiential demonstrations, mass media ads, mascots and catchy slogans have heightened engagement for many audiences (Fredricks 2001; Mcclure 2006; Suarez *et al*. 2005).

- **Positive, empowering and accurate examples.** Negative images of disaster destruction can be overwhelming (Lopes 1992). Positive, empowering and accurate visuals can reinforce proactive behaviour (Lehman and Taylor 1988; Mulilis and Duval 1995).

- **Use of role models.** Community leaders and carefully-selected celebrity spokespeople can be especially effective role models for risk reduction action. Teachers, as key role models for young people, can also be change agents when promoting risk awareness, risk reduction and use of financial tools to protect against loss (Shiwaku *et al*. 2006).

- **Targeting of multiple audiences.** Vulnerability to hazards can vary across populations (Cutter 1994; Fothergill 1996; Wisner *et al*. 2004). Education efforts that have found effective dissemination avenues for vulnerable sub-populations, have been able to reach the greatest number of at-risk individuals (Bhatti and Ariyabandu 2022). These efforts have varied to take into account the specific needs, languages, cultures, as well as vulnerabilities and capacities of each audience. They have also included positive and empowering illustrations of women, children, and members of minority groups, allowing the receiver to identify positively with the examples.

- **Multiple dissemination strategies.** With diverse populations exposed to natural hazards, successful risk awareness programmes have found ways to repeat their messages to each audience for maximum impact. The use of multiple dissemination strategies has supported the process of behaviour change from contemplation, to action, and finally habit development (Ajzen 1991; Velicer *et al*. 2006).

References

ADPC. 2007. *RCC guideline 6.1 mainstreaming disaster risk reduction into school curriculum, consultation version*. Regional Consultative Committee on Disaster Management, Asian Disaster Preparedness Center.

Ajzen, I. 1991. The theory of planned behavior. *Organizational Behavior and Human Decision Processes* 50 (1):179-211.

Alesch, Daniel, Peter May, Robert Olshansky, William Petak, and Kathleen Tierney. 2004. *Promoting seismic safety: Guidance for advocates*. United States Federal Emergency Management Agency.

Alexander, David. 2007. Misconceptions as a barrier to teaching about disasters. *Prehospital and Disaster Medicine* 22 (2):95-103.

Anderson, William. 2005. Bringing children into focus on the social science disaster research agenda. *International Journal of Mass Emergencies and Disasters* 23 (3):159-175.

Annan, Kofi. 1999. Facing the humanitarian challenge: Towards a culture of prevention. Paper read at 54th session of the United Nations General Assembly, at New York.

ARC. 2007. *Talking about disaster: Guide for standard messages*. Washington, DC: Coalition of Organizations for Disaster Education. Available from http://www.redcross.org/disaster/disasterguide /standardmsg.html.

Arnalds, Thornstien, Sven Sigurodsson, and Kristjan Jonasson. 2004. Avalanche hazard zoning in Iceland based on individual risk. *Annals of Glaciology* 38:285-290.

Bajek, Robert, Yoko Matsuda, and Norio Okada. 2007. Japan's *jishu-bosai-soshiki* community activities: Analysis of its role in participatory community disaster risk management. *Natural Hazards* Online First: http://www.springerlink.com/content/102967/?Content+Status=Accepted.

Bankoff, Greg. 2003. Constructing vulnerability: The historical, natural and social generation of flooding in metropolitan manila. *Disasters* 27 (3):224-238.

Bhatti, A., and M. Ariyabandu. 2022. *Disaster communication: A resource kit for media*. Colombo and Islamabad: ITDG- South Asia and Journalists Resource Centre.

BRI, and GRIPS. 2007. *Disaster education*. Kobe, Japan: Building Research Institute and the National Graduate Institute for Policy Studies.

Camerer, Colin, and Howard Kunreuther. 1989. Decision processes for low probability events: Policy implications. *Journal of Policy Analysis and Management* 8:565-592.

CRED. 2007. Emergency disasters data base (EM-DAT): Centre for Research on the Epidemiology of Disasters. Available from http://www.em-dat.net/.

Cutter, Susan K. 1994. *Environmental risks and hazards*. Englewood Cliffs, NJ: Prentice-Hall.

_____. 2002. The changing nature of risks and hazards. In *American hazardscapes: The regionalization of hazards and disasters*, edited by S. L. Cutter. Washington D. C.: Joseph Henry Press.

Davis, Ian, M. Hosseini, and Y. O. Izadkhah. 2003. Public awareness and education in disaster risk reduction: A key element in the development of a safety culture. Paper read at SEE-4 Conference, at Tehran, Iran.

Dilley, Maxx, Robert S. Chen, Uwe Deichmann, Arthur L. Lerner-Lam, Margaret Arnold, Jonathan Agwe, Piet Buys, Oddvar Kjekstad, Bradfield Lyon, and Gregory Yetman. 2005. *Natural disaster hotspots: A global risk analysis*. The World Bank Hazard Management Unit.

Europe, Council of. 2005. Contribution to the international strategy for disaster reduction and the euro-Mediterranean co-operation for risk prevention. Paper read at United National World Conference on Disaster Reduction, 18-22 January, at Kobe, Japan.

_____. 2006. *11th ministerial session of the european and Mediterranean major hazards agreement*. Marrakech, Morocco: EUR-OPA.

Evans, Leonard, Michael C. Frick, and Richard C. Schwing. 1990. Is it safer to fly or drive? *Risk Analysis* 10 (2):239-245.

Finnis, K. 2004. *Creating a resilient new zealand*. Wellington: Ministry of Civil Defence and Emergency Management.

Fi ek, Güler, Serra Müderriso lu, and Gökçe Özkarar. 2001. *Integrated decision support system for disaster management in Turkey: Pilot study results of the psychosocial module*. Istanbul: Bo aziçi University.

Fothergill, Alice. 1996. Gender, risk and disaster. *International Journal of Mass Emergencies and Disasters* 14 (1):33-56.

Fredricks, Anthony D. 2001. *Investigating natural disasters through children's literature: An integrated approach*. Englewood, CO: Teacher Ideas Press.

Goto, Masakazu 2007. *Integrating disaster risk reduction into school curricula and developing of its educational materials in Japan*. National Institute for Educational Policy Research of Japan.

Gough, Janet. 2000. Perceptions of risk from natural hazards in two remote new zealand communities. *The Australasian Journal of Disaster and Trauma Studies* 2: http://www.massey.ac.nz/~trauma/issues/2000-2/gough.htm.

Gupta, Manu. 2002. Empowered individual: Caring neighbors make the best disaster managers. Paper read at Regional Workshop on Best Practices in Disaster Mitigation, at Bali, Indonesia.

Harvey, Ryland. 2007. Email correspondence.

Helweg-Larson, M. 1999. (the lack of) optimitistic bias in response to the 1994 northridge earthquake: The role of personal experience. *Basic and Applied Social Psychology* 21:119-129.

Hurnen, F., and John McClure. 1997. The effect of increased earthquake knowledge on perceived preventability of earthquake damage. *The Australasian Journal of Disaster and Trauma Studies* 1997-3.

IADB. 2005. *Indicators of disaster risk and risk managment: Program for latin American and the Caribbean*. Manizales, Columbia: Inter-American Development Bank.

IBHS. 2004. *The benefits of modern wind resistant building codes on hurricane claim frequency and severity: A summary report*. Charlotte County, Florida: Institute for Business and Home Safety.

ICC. 2006. Rebuilding a culture of safety on the gulf coast. *Building Safety Journal of the International Code Council* (April):18-21.

IRC. August 2006. *Public attitude monitor*. Insurance Research Council. Available from www.ircweb.org.

Izadkhah, Y. O. 2005. Disaster education, a right to the generation's safety. Education for sustainable development, cases studies and best practices. Paper read at United Nations World Conference on Disaster Reduction, January, 2005, at Kobe, Japan.

Izadkhah, Y. O., and Ian Davis. 2006. Problems and opportunities in the integration of school education programmes within wider seismic risk reduction strategies. Paper read at 8NCEE, April 2006, at San Francisco, CA.

Johnston, D., D. Paton, G. L. Crawford, K. Ronan, B. Houghton, and P. Burgelt. 2005. Measuring tsunami preparedness in coastal washington, United States. *Natural Hazards* 35:173-184.

Kelman, I. 2007. *Mitigation saves*. Available from www.ilankelman.org/miscellany/MitigationSaves.rtf.

Krischenbaum, A. 2002. Disaster preparedness: A conceptual and empirical reevaluation. *International Journal of Mass Emergencies and Disasters* 20 (1):5-28.

Kuberan, R. 2007. *Disaster risk reduction education efforts in india*. New Delhi: Risk RED and Sustainable Environment and Ecological Development Society.

Kunreuther, Howard. 2001. Protective decisions: Fear or prudence. In *Wharton on making decisions*, edited by S. J. Hoch and H. C. Kunreuther. New York: Wiley.

Kunreuther, Howard, Robert Meyer, and Erwann Michel-Kerjan. 2007. Strategies for better protection against catastrophic risks. Paper read at Conference on the Behavioral Foundations of Policy, October 19-20, at Princeton University.

Lasker, Roz D. 2004. *Redefining readiness: Terrorism planning through the eyes of the public*. New York, NY: The New York Academy of Medicine.

Lehman, D. R., and S. E. Taylor. 1988. Date with an earthquake: Coping with a probable, unpredictable disaster. *Personality and Social Psychology Bulletin* 13:546-555.

Lidstone. 1996. Geography, environmental education and disaster mitigation. *Australian Journal of Emergency Management* 10 (4):33-41.

Lidstone, J. 2005. Teaching for disaster mitigation in a time of terrorism: Can the lessons from natural disasters be applied to the new world order? *The Australasian Journal of Disaster and Trauma Studies* 20 (2).

Lindell, M. K., and R. W. Perry. 2000. Household adjustment to earthquake hazard: A review of research. *Environment and Behavior* 32 (4):461-501.

Lopes, R. 1992. *Public perception of disaster preparedness presentations using disaster damage images*. Boulder, CO: Natural Hazard Research.

McClure, John. 2006. *Guidelines for encouraging householders' preparations for earthquakes in new zealand*. Building Research. Available from http://www.buildingresearch.org.nz/assets/pdfs/McClure.pdf.

Mileti, Dennis, and J. D. Darlington. 1995. Societal response to revised earthquake probabilities in the san francisco bay area. *International Journal of Mass Emergencies and Disasters* 113:119-145.

Mileti, Dennis, Sarah Nathe, Paula Gori, Marjorie Greene, and Elizabeth Lemersal. 2004. *Public hazards communication and education: The state of the art*. Boulder, CO: Natural Hazards Research and Applications Information Center.

Miller, Candysse. 2006. What, me worry? Ambivalence in disaster central. Paper read at IBHS Annual Conference, November 16, at Orlando, Florida.

Mulilis, J. P., and T. S. Duval. 1995. Negative threat appeals and earthquake preparedness: A person-relative-to-event (pre) model of coping with threat. *Journal of Applied Social Psychology* 25:1319-1339.

Nathe, Sarah, Paula Gori, Marjorie Greene, Elizabeth Lemersal, and Dennis Mileti. 1999. Public education for earthquake hazards. *Natural Hazards Informer* (2).

NHTSA. 2005. *Traffice safety fact: 2005 data*. Washington, D.C.: National Highway and Traffic Safety Agencies, National Center for Statistics and Analysis. Available from http://www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/TSF2005/810621.pdf.

Obonsawin, Julie. 2007. *Disaster risk reduction education efforts in Canada*. Toronto: Risk RED.

OECD. 2003a. *Emerging risks in the 21st century: An agenda for action*. Paris: Organisation for Economic Co-operation and Development.

_____. 2003b. *Environmental risks and insurance: A comparative analysis of the role of insurance in the management of environment-related risks*. Paris: Organisation for Economic Co-operation and Development.

_____. 2005a. *Catastrophic risks and insurance, Policy Issues in Insurance n°8:*. Paris: Organisation for Economic Co-operation and Development.

_____. 2005b. *Recommendation on principles and good practices for financial education and awareness: Recommendation of the council*. Organisation for Economic Co-operation and Development.

_____. 2008. Report on awareness and education on risk and insurance issues: Recommendation on good practices for enhanced risk awareness and education on insurance issues. In *Improving Financial Education and Awareness on Insurance and Private Pensions*. Paris: Organisation for Economic Co-operation and Development.

Palm, R., and M. Hodgson. 1992. *After a california earthquake: Attitude and behaviour change*. Chicago: University of Chicago Press.

Paton, D., L. Smith, and D. Johnston. 2005. When good intentions turn bad: Promoting natural hazard preparedness. *The Australasian Journal of Disaster and Trauma Studies* 20 (1):25-30.

Pelling, Mark. 2003. *The vulnerability of cities: Natural disasters and social resilience*. London: Earthscan.

Petal, M. 2004. Urban disaster mitigation and preparedness: The 1999 Kocaeli earthquake, Urban and Regional Planning, University of California, Los Angeles, Los Angeles, CA.

Petal, M., Zeynep Turkmen, Alinacik Umit, and Suheyla Sezan. 2006. *Basic disaster awareness in Turkish schools program, 2002-2005, final report*. Istanbul, Turkey: Bogazici University and Turkish Ministry of Education.

Petal, M., Suha Ulgen, Gul Okoh, and Umit Alinacik. 2002. *Ümraniye women's outreach community disaster preparedness project final report*. Istanbul, Turkey: Disaster Preparedness Education Project, Kandilli Observatory and Earthquake Research Institute, Bogazici University.

Petal, Marla. 2003. *Disaster preparedness education project 2001-2003 ten best*. Isatnbul, Turkey: Disaster Preparedness Education Unit, Kandilli Observatory and Earthquake Research Institute, Bogazici University.

_____. 2008. Disaster risk reduction education: Material development, organization, evaluation. In *RDD journal*, edited by I. Kelman. Kobe, Japan.

Pitt, Sir Michael. 2007. The Pit Review: Learning lessons from the 2007 floods, an independent review by Sir Michael Pitt (Interim Report). Crown Publications: London.

Plan. 2007. *Case study: The power of children's voices in school relocation - Santa Paz*. Plan International Disaster Risk Reduction Programme. Available from www.plan-uk.org.

Rohrmann, Bernd. 2000. Cross-cultural studies on the perception and evaluation of hazards. In *Cross-cultural risk perception: A survey of empirical studies*, edited by O. Renn and B. Rohrmann. Dordrecht, Germany: Kluwer Academic Publishers.

Ross, Katharyn, E. K. 1989. *Issues in earthquake education, technical report nceer-02-0003*. Buffalo: National Center for Earthquake Engineering Research.

Shaw, Rajib. 2005. Bridging the gap between knowledge and practice: Towards a culture of safety and disaster resilience in Asia. Paper read at Minpaku Forum, at Osaka, Japan.

Shiroshita, Hideyuki. 2006. A study on educational systems of disaster reduction with in the japanese compulsory curriculum (in Japanese), Graduate School of Informatics, Kyoto University, Kyoto.

Shiroshita, Kideyuki, and Yoshiaki Kawata. 2007. Institutional problems in disaster education in compulsory schools analyzed from the historical transition of the course of study. *Journal of Japan Society for Natural Disaster Science* 26 (2):163-176.

Shiwaku, Koichi, Rajib Shaw, Ram Chandra Kandel, Surya Narayan Shrestha, and Amod Mani Dixit. 2006. Promotion of disaster education in Nepal: The role of teachers as change agents. *International Journal of Mass Emergencies and Disasters* 24 (3):403-420.

Slovic, Paul. 2000. *The perception of risk*. London: Earthscan Publications Ltd.

Stone, E. R., J. F. Yates, and A. M. Parker. 1994. Risk communication: Absolute versus relative expressions of low-probability risks. *Organizational Behavior and Human Decision Processes* 60:387-403.

Suarez, P., F. Benavidez, A. Santoro, and J. M. de Suarez. 2005. Video tools for community-level disaster risk reduction. Paper read at Fifth Annual IIASA-DPRI Forum on Integrated Disaster Risk Management: Innovations in Science and Policy, September 14-18, at Beijing, China.

Tanaka, Kazuko. 2005. The impact of disaster education on public preparations and mitigation for earthquakes: A cross-country comparison between fukui, japan and san francisco bay area, california, USA. *Applied Geography* 25 (3):201-225.

Turkmen, Zeynep. 2007. *Disaster risk reduction education efforts in Turkey*. Istanbul, Turkey: Risk RED.

Tversky, A., and D. Kahnemann. 1974. Judgment under uncertainty: Heuristics and biases. *Science* 185:1124-1131.

Twigg, J. 2004. *Disaster risk reduction: Mitigation and preparedness in development and emergency programming*. London: Overseas Development Institute, Humanitarian Practice Network.

UNISDR. 2004. *Living with risk: A global review of disaster reduction initiatives*. New York: United Nations United Nations.

_____. 2005. *Hyogo framework for action 2005-2015: Building the resilience of nations and communities to disasters (HFA)*. Kobe, Hyogo: United Nations International Strategy for Disaster Reduction.

_____. 2004. *Terminology of disaster risk reduction*. United Nations International Strategy for Disaster Reduction, Available from www.unisdr.org/eng/library/lib-terminology-eng%20home.htm.

_____. 2007. *Towards a culture of prevention: Disaster risk reduction begins at school - good practices and lessons learned*. United Nations International Strategy for Disaster Reduction. Available from www.unisdr.org.

_____. 2007. *Words into action: A guide for implementing the Hyogo framework*. Kobe, Hyogo: United Nations International Strategy for Disaster Reduction, Available from www.unisdr.org/words-into-action.

Vari, Anna, and Ray Kemp. 1991. Public concerns about llrw facility siting: A comparative study. *Journal of Cross-Cultural Psychology* 22 (1):83-102.

Vaughan, Elaine, and Brenda Nordenstam. 1991. Cognitive representation of risk perceptions: A comparison of japan and the united states. *Journal of Cross-Cultural Psychology* 22 (1):29-60.

Velicer, W. F., J. O. Prochaska, J. L. Fava, G. J. Norman, and C. A. Redding. 2006. Applications for the transtheorteical model of behavior change. *Homeostatis* 38 (216-233).

Victoria, Lorna P. 2005. Community based approaches to disaster mitigation. In *World Conference on Disaster Reduction*. Hyogo, Japan: United Nations International Strategy for Disaster Reduction.

Weinstein, N. D. 1980. Unrealistic optimism about future life events. *Journal of Personality and Social Psychology* 39:806-820.

Whittaker, John D. 1986. Evaluation of acceptable risk. *Journal of the Operational Research Society* 37 (6):541-547.

Wisner, Ben. 2006. *Let our children teach us! A review of the role of education and knowledge in disaster risk reduction*. ISDR System Thematic Cluster/Platform on Knowledge and Education. Available from http://www.unisdr.org/eng/partner-netw/knowledge-education/docs/Let-our-Children-Teach-Us.pdf.

Wisner, Ben, Piers Blaikie, Terry Cannon, and Ian Davis. 2004. *At risk: Natural hazards, people's vulnerability, and disasters*. 2nd ed. London: Routledge.

Zugman Do Coutto, Ruth; Rouhban, Badaoui M. 2004. *Apell for earthquake risk: A community-based approach for disaster reduction*. UNEP. Available from http://unesdoc.unesco.org/images/0013/001378/137829e.pdf.

Annex 1. Summary of the Hyogo Framework for Action 2005-2015

International Strategy for Disaster Reduction

SUMMARY of the Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters (Hyogo Framework)

Expected outcome, strategic goals and priorities for action 2005-2015

Expected Outcome
The substantial reduction of disaster losses, in lives and in the social, economic and environmental assets of communities and countries

Strategic Goals

- The integration of disaster risk reduction into sustainable development policies and planning
- Development and strengthening of institutions, mechanisms and capacities to build resilience to hazards
- The systematic incorporation of risk reduction approaches into the implementation of emergency preparedness, response and recovery programmes

Priorities for Action

Key Activities

1. Ensure that disaster risk reduction (DRR) is a national and a local priority with a strong institutional basis for implementation	2. Identify, assess and monitor disaster risks and enhance early warning	3. Use knowledge, innovation and education to build a culture of safety and resilience at all levels	4. Reduce the underlying risk factors	5. Strengthen disaster preparedness for effective response at all levels
• DRR institutional mechanisms (national platforms); designated responsibilities • DRR part of development policies and planning, sector wise and multisector • Legislation to support DRR • Decentralisation of responsibilities and resources • Assessment of human resources and capacities • Foster political commitment • Community participation	• Risk assessments and maps, multi-risk: elaboration and dissemination • Indicators on DRR and vulnerability • Data & statistical loss information • Early warning: people centered; information systems; public policy • Scientific and technological development; data sharing, space-based earth observation, climate modeling and forecasting; early warning • Regional and emerging risks	• Information sharing and cooperation; • Networks across disciplines and regions; dialogue • Use of standard DRR terminology • Inclusion of DRR into school curricula, formal and informal education • Training and learning on DRR: community level, local authorities, targeted sectors; equal access • Research capacity: multi-risk; socio-economic; application • Public awareness and media	• Sustainable ecosystems and environmental management • DRR strategies integrated with climate change adaptation • Food security for resilience • DRR integrated into health sector and safe hospitals • Protection of critical public facilities • Recovery schemes and social safety- nets • Vulnerability reduction with diversified income options • Financial risk-sharing mechanisms • Public-private partnership • Land use planning and building codes • Rural development plans and DRR	• Disaster management capacities: policy, technical and institutional capacities • Dialogue, coordination & information exchange between disaster managers and development sectors • Regional approaches to disaster response, with risk reduction focus • Review & and exercise preparedness and contingency plans • Emergency funds • Voluntarism & participation

Cross Cutting Issues

- Multi-hazard approach
- Gender perspective and cultural diversity
- Community and volunteers participation
- Capacity building & technology transfer

Contributing to the achievements of the internationally agreed development goals (including the MDGs)

Annex 2. Selected examples of risk awareness and reduction education programmes

(annotations indicate scale of reach and sector)

Canada

Canadian Natural Hazards Assessment Project *(National: Cross Sectoral)*

The Canadian Natural Hazards Assessment Project is collaborative effort of the Meteorological Service of Canada, the Institute of Catastrophic Loss Reduction and the Office of Critical Infrastructure Protection and Emergency Preparedness. A set of background technical papers regarding the risk to Canadians from natural hazards, how those risks might be mitigated, and an inventory of gaps in knowledge have been developed as well as a synthesis document suitable for the general public.

www.msc-smc.ec.gc.ca/projects/hazards_assessment

Canadian Red Cross *(National: Civic Sector)*

The Canadian Red Cross provides information on how to be prepared for emergencies. They also teach *Quakesafe,* a personal preparedness course and first aid classes, as well as selling first aid and emergency kits.

www.redcross.ca

Emergency Preparedness for Industry and Commerce Council (*Regional: Cross-Sectoral Partnership)*

EPICC is a non-profit government endorsed society supported by and for the benefit of business and institutions throughout British Columbia, Canada, to influence and help businesses prepare for emergencies and disasters. They organise conferences and provide information kits for businesses concerned about natural hazard risk reduction.

www.epicc.org

Expect the Unexpected *(National: Civic-Private Partnership)*

Expect the Unexpected is a programme of the Canadian Red Cross, State Farm Insurance and the Weather Network to prepare children for natural hazards, and emergency preparedness. The programme has three components: It can happen, be ready (7-8 years); Facing the unexpected, be prepared (10-11 years); and Be ready, be safe (12-13 years). The programme has reached more than 750,000 children.

www.redcross.ca/article.asp?id=009874&tid=028

FireSmart *(National: Public Sector)*

Natural Resources Canada in collaboration with federal, provincial and municipal governments and organisations developed the FireSmart Program which provides information and guidelines for protecting communities from wildfire. Over 15,000 copies of the manual have been distributed across Canada and internationally. They also provide Community Grant Program for projects to reduce the risk of wildfire in a community.

www.srd.gov.ab.ca/wildfires/firesmart

Get Prepared *(National: Public Sector)*

The national *Get Prepared* campaign educates the general public about the risks in their area and encourages them to make a plan and an emergency kit. There are also publications regarding specific hazards and a general guide for business continuity. Each May, Public Safety of Canada in collaboration with provincial and territorial governments has an emergency preparedness week to increase awareness and reinforce the idea that preparedness can reduce risks and lessen disasters.

http://getprepared.ca/

Institute for Catastrophic Loss Reduction *(National: Cross Sectoral)*

The Institute for Catastrophic Loss Reduction (ICLR) is a co-ordinated effort to reduce disaster losses involving member insurance companies, The University of Western Ontario and other partners. They have risk awareness and preparedness information for the general public on earthquakes, flood/droughts, hurricanes, lightening/hail, tornadoes, wildfires, and winter storms.

www.iclr.org

Insurance Bureau of Canada *(National: Private Sector)*

The Insurance Bureau of Canada provides free resources to educate the public on how to protect their families and homes before, during and after natural disasters, such as earthquakes, hurricanes, lightning, hail, tornados and winter storms.

www.ibc.ca/en/natural_disasters

Ministry of Public Safety *(Regional: Public Sector)*

The British Columbia Ministry of Public Safety provides information for the general public regarding community emergency planning, response and recovery. There are similar programmes in each province.

www.pep.bc.ca

Ontario Storm Prediction Centre *(Regional: Public Sector)*

The Ontario Storm Prediction Centre and Environment Canada advise the public by providing special winter weather alerts and information regarding preparedness for weather hazards.

www.on.ec.gc.ca/weather/SVRWX/SVRWX_Awareness-e.html
www.on.ec.gc.ca/pubs_e.html

Pegasus Emergency Management Consortium *(National: Private Sector)*

The Pegasus Emergency Management Consortium distributes two booklets: *Quick Guide to Family Emergency Preparedness* and *Generic Emergency Plan for Schools*. They also have the *Kids Can, Emergency Plan* colouring and activity book.

www.pegasusemc.com

School Earthquake Safety Guidebook *(Regional: Public Sector)*

British Columbia's Provincial Emergency Preparedness Program has developed the *School Earthquake Safety Guidebook*, which is distributed to schools.

www.pep.bc.ca/schools/schools.html

Seismic Hazard Mitigation Program *(Regional: Public Sector)*

The Seismic Hazard Mitigation Program for High-Risk Buildings in Vancouver, British Columbia is developing a long-term strategy to prepare for and reduce the impact of a major earthquake on seismically vulnerable buildings. Some of the goals of the project are to educate building owners about the seismic vulnerability of their buildings in the hope that they will upgrade them voluntarily and to provide incentives to encourage building owners to upgrade their buildings within a certain time period.

vancouver.ca/commsvcs/cbofficial/sesmicupgrade.htm

China

Academy of Disaster Reduction and Emergency Management *(National: Public Sector)*

The Academy of Disaster Reduction and Emergency Management Education in the Ministry of Civil Affairs and Ministry of Education have created materials to educate students in middle school and at the undergraduate, master and doctorate levels in risk mitigation and preparation. The websites are in the process of being constructed.

http://adrem.org.cn
http://iRisknet.cn

Beijing Earthquake Administrations *(National: Public Sector)*

The Beijing Municipality Earthquake Administration provides public information via its website on earthquake risk awareness, risk reduction measures and what to do during an earthquake.

www.bjdzj.gov.cn

China Ministry of Civil Affairs *(National: Public Sector)*

China Ministry of Civil Affairs is the main emergency management governing body in China. The Ministry of Civil Affairs & Ministry of Education, the People's Republic of China, along with the Academy of Disaster Reduction

and Emergency Management has established the Risk Mitigation Education Program.

www.mca.gov.cn

Chinese Museum of Earthquakes *(National: Public Sector)*

The Chinese Museum of Earthquakes is a virtual museum created by the Chinese Academy of Sciences. It is dedicated to educating the public about earthquakes in China. It works to teach all ages about earthquake risk awareness, preparedness and planning.

www.kepu.net.cn/english/quake

Red Cross Society of China *(National: Civic Sector)*

The Red Cross Society of China has held disaster relief training workshops and first aid training.

www.chineseredcross.org.cn

Iceland

Civil Protection Department *(National: Public Sector)*

The Civil Protection Department of Iceland's website has lists of what to do before and during disasters. There is also general information regarding how to be prepared for an emergency. They have also created maps and brochures regarding volcano and flash flood evacuation. The information is available in several languages.

www.almannavarnir.is

Icelandic Emergency Insurance Organisation *(National: Public Sector)*

The Icelandic Emergency Insurance Organisation manages the coverage of damages from volcanic eruptions, earthquakes, earth slides, avalanches, and floods. All insurance companies that insure property against fire are required to collect a tariff to fund this mandatory catastrophe insurance along with their premiums.

www.fme.is

Icelandic Meteorological Office *(National: Public Sector)*

The Icelandic Meteorological Office website gives locations of earthquakes in Iceland in the last 48 hours. The image is refreshed every 2 minutes. It also provides hazard zoning for slides and gives reports and other information about hazard zoning in communities where there is a danger of avalanches and landslides.

http://andvari.vedur.is/english/

Icelandic Red Cross *(National: Civic Sector)*

The Icelandic Red Cross has training for course leaders in emergency response.

http://redcross.is

India

Amity Institute of Disaster Management *(National: Private Sector)*

The Amity Institute of Disaster Management has created a three month course to address the urgent need to raise awareness levels of the general public. The courses are aimed at officers of the defence forces and other professionals.

www.amity.edu/aidm

Central Board of Secondary Education *(National: Public)*

The Central Board of Secondary Education has integrated a short course on Disaster Management in the 8th, 9th and 10th standard school curriculum and provided teacher training programmes across the country. Disaster management is ten percent of the total social science syllabus. The curriculum contains information on the nature and types of hazards, natural and manmade disasters and need for their management, efforts made in different regions towards disaster preparedness and mitigation, the role of the community and schools, partnerships with the government and non-governmental agencies, the use of technology to combat disasters, and survival skills. The board also intends to introduce Disaster Management as a part of Geography, Sociology, and Environmental Education in the 11th and 12th standard.

www.cbse.nic.in

Global Open Learning Forum on Risk Education *(National: Civic-Private Partnership)*

The Global Open Learning Forum on Risk Education (GOLFRE) is a group of internationally based universities and non-profit organisations that have created a three month certificate course on disaster awareness, preparedness, and response for school teachers and field practitioners. Material is either distributed by electronic media or by post. This programme is implemented in India by the Sustainable Environment and Ecological Development Society (SEEDS).

www.seedsindia.org

Gujarat State Disaster Management Authority *(Regional: Public-Civic Partnership)*

The Gujarat State Disaster Management Authority and the Sustainable Environment and Ecological Development Society (SEEDS) implemented a two year pilot project entitled the *Gujarat School Safety Initiative (GSSI)* that made disaster risk reduction an integrated part of school based learning. The first phase of the project focused covered three cities: Ahmadabad, Jamnagar and

Vadodara. The second phase covered all 25 districts in the state. The third phase of the School Safety Initiative is being planned to upscale the programme in selected districts and talukas of the State.

www.gsdma.org

Indian Red Cross Society *(National: Civic Sector)*

A Diploma Course in Disaster Preparedness and Rehabilitation was started by the Indian Red Cross Society. The course is aimed at increasing the capacity of the managers in Government and Private Sector for effective disaster response and rehabilitation. They are also finalising a Community Based Disaster Preparedness (CBDP) model for the Training of Trainers.

www.indianredcross.org

Duryog Nivaran -South Asia Network for Disaster Risk Reduction *(International: Civic Sector)*

Duryog Nivaran, a multi-national south Asian network of civic sector organisations working on disaster risk reduction, aims to reduce the vulnerability of communities to disasters and conflicts by promoting the integration of alternative perspectives on disaster and vulnerability in development and disaster mitigation programmes. In India, the organisation engages in community disaster preparedness projects and has recently published a guide for journalists, encouraging them to cover both disasters and underlying causes.

www.duryognivaran.org

National Disaster Management Authority of the Ministry of Home Affairs *(National: Public Sector)*

The National Disaster Management Section of the Ministry of Home Affairs 2007 Guidelines on Management of Earthquakes has made awareness and preparedness a key focal area. Information for the public on disaster preparedness, response and mitigation has been and continues to be developed. This information includes the *Children's Colour Activity Book for Disaster Preparedness* and information on the *School Awareness Safety Programme*. The Ministry of Home Affairs has also compiled a set of disaster resource materials to be translated, adapted and disseminated by state governments and DMAs based on local vulnerabilities. One of the four sections included is education and training.

www.ndmindia.nic.in

National Steering Committee for Media Campaign and Publicity Relating to Disaster Management *(National: Public Sector)*

A steering committee has been organised to devise a nation wide awareness campaign as part of the governments overall disaster risk management strategy. The committee plans on using print and electronic media, postings in places with high public visibility, and messages on government stationary (postal letters, railway tickets, and airline boarding cards) to promote their message.

www.ndmindia.nic.in/Mitigation/mitigationhome.html

National Cyclone Mitigation Project *(National: Public Sector)*

The Government of India has decided to implement the World Bank assisted *National Cyclone Mitigation Project* in nine states and four Union Territories that are vulnerable to the risks of cyclones. The plan includes the creation of shelters, warning systems and public education.

http://mdmu.maharashtra.gov.in/pages/nationalcyclone/nationalcycloneShow.php

National Information Centre of Earthquake Engineering *(National: Education Sector)*

The National Information Centre of Earthquake Engineering located at The Indian Institute of Technology Kanpur provides seismic risk reduction information for professionals and the general public. They have an informative website, printed material and offer courses aimed at teaching seismic resistant construction techniques to engineers, construction workers and self builders.

www.nicee.org

National Institute of Disaster Management *(National: Public Sector)*

The National Institute of Disaster Management (NIDM) is part of the Ministry of Home Affairs. It provides policy advice and facilitates capacity building services including strategic learning, research, training, system development, and expertise promotion for effective disaster preparedness and mitigation.

www.nidm.net

Omaxe Foundation Earthquake Resistant Structures Education *(National: Private-Public Partnership)*

The Omaxe Foundation, a leading real estate and construction company, facilitates disaster resistant construction workshops and seminars throughout India, including the *All India Workshop on Earthquake Resistant Structures in Partnership* that was organised in cooperation with the UNDP in 2007.

www.omaxefoundation.co.in

Orissa State Disaster Mitigation Authority *(Regional: Public Sector)*

The Orissa State Disaster Mitigation Authority (OSDMA) publishes a quarterly newsletter in English and Oriya languages and disaster reduction education materials. They also organise workshops and training programmes for officials, Panchayati Raj Institutions and non-profit groups involved in disaster management. Community based disaster preparedness, preparation of community based disaster management plans, and earthquake preparedness training programmes are also being offered.

www.osdma.org

Sanghamitra Service Society *(Regional: Civic Sector)*

The Sanghamitra Service Society (SSS) under its Community Initiatives in Disaster Risk Reduction works actively in 10 districts of Andhra Pradesh State, covering almost 100 villages. They focus on community capacity building by providing school training, mangrove development, preparedness classes, response information, a community disaster relief fund, and awareness camps.

www.disasterwatch.net

Save the Children *(Regional: Civic Sector)*

Save the Children is working with 40 villages in Rajasthan to establish village level committees comprised of local leaders, Panchayat members, teachers and children. These committees meet once a month to work on issues pertaining to drought in their villages.

http://savethechildren.in/india/

SEEDS Mason Association *(National: Public-Civic Partnership)*

The SEEDS Mason Association has a mason certification programme that was introduced by the Gujarat State Disaster Management Authority (GSDMA) and the Gujarat State Vocational Training Institute (GSVT). Over 450 masons have been trained in disaster resistant skills to date.

www.seedsindia.org/SMA/en.pdf

Siel Chemical *(Local: Private Sector)*

Siel Chemical conducts preparedness programmes for employees, school children and nearby villages.

www.sielchemical .com

Sustainable Environment and Ecological Development Society *(Regional: Civic Sector)*

The Sustainable Environment and Ecological Development Society (SEEDS) has several sustainable community initiatives, including disaster reduction awareness, cyclone preparedness drills, and safe construction practices.

www.seeds.india.org

Tata Chemicals *(Local: Private Sector)*

Tata Chemicals conducts safety and risk management programmes to educate their employees and the communities surrounding their plant about disaster risk.

www.tatachemicals.com

United Nations Development Programme in India *(National: Public Sector)*

The United Nations Development Programme is supporting the government of India to set up an institutional framework for disaster preparedness, response, prevention and mitigation. The project has been implemented in 169 districts spread across 17 states. Two of the main objectives of this programme are to strengthen education and awareness programmes.

www.undp.org.in

Voluntary Health Association of India *(Regional: Civic Sector)*

The Voluntary Health Association of India through the Aparajita Orissa Project and Aparajita Andamans Project aims at empowering the local community and build their capacity to recover from devastation and prepare for future natural disasters.

www.vhai.org

Italy

Civil Protection Agency *(National: Public Sector)*

The Italian Civil Protection Agency has information for the general public regarding fires, hydrological risk, volcanoes, earthquakes, and health risks.

www.protezionecivile.it

Civil Protection Club *(National: Public Sector)*

The Italian Civil Protection Agency has created a civil protection club for 4th and 5th graders in elementary school in Italy. They use a login name and password in order to enter the site and learn disaster risk awareness, reduction and preparedness.

www.protezionecivile.it/club

Civil Protection for Children *(National: Public Sector)*

La Protezione Civile per i Piccolo has awareness and preparedness information geared at children in an interactive format. It has information regarding industrial risk, seismological risk, fire risk, hydrological risk, volcanic risk, and health risk.

www.protezionecivile.it/sitobambini/home.html

The European University Centre for Cultural Heritage *(National: Education Sector)*

The European University Centre for Cultural Heritage has courses on seismic risk and mitigation for builders and school teachers.

www.univeur.org

International Institute to Stop Disasters *(International: Civic Sector)*

The International Institute to Stop Disasters, located in Italy, has created many different educational campaigns focused on disaster risk preparedness and sustainable development. They have also coordinated the Medsafe Network, which facilitates interaction and communication between individuals and organisations focused on disaster prevention and sustainable development in the Mediterranean region. They also support CIDAS, a centre which contains hundreds of documents in several languages on city emergency, the prevention of risk and sustainable development. Students, teachers, university researchers, professionals and others consult CIDAS to gain information.

www.stopdisasters.org

Italian Red Cross *(National: Civic Sector)*

The Italian Red Cross provides first aid training for their staff and volunteers.

www.cri.it

CESPRO at the University of Florence *(National: Education Sector)*

CESPRO uses an interdisciplinary approach to promote work connected with natural and technological risks in liaison with civil protection, security and environmental authorities and organisations.

www.cespro.unifi.it

Japan

Annual Radio Presenters Disaster Preparedness Event *(National: Private Sector)*

The General Insurance Association of Japan and the National Association of Commercial Broadcasters organise an edification event annually that invites more than 100 radio presenters from all over the nation. Presenters experience affects of a large earthquake and then listen to lectures on the importance of disaster preparedness. The presenters are then asked to speak about their experience with their listening audience.

www.sonpo.or.jp

Council for Promotion of Building Disaster Prevention *(National: Civic Sector)*

The Japan Building Disaster Prevention Association is part of the Council for Promotion of Building Disaster Prevention. The Association contributes to promoting building disaster prevention and to disseminating appropriate building maintenance and use. It also distributes pamphlets and posters to raise the public awareness on building disaster prevention during Disaster Prevention Week.

www.kenchiku-bosai.or.jp/english/file/epanf.PDF

Disaster Prevention Research Institute *(National: Education Sector)*

The Disaster Prevention Research Institute (DPRI) at Kyoto University has an online disaster information database that is searchable and open to the public.

www.dpri.kyoto-u.ac.jp

Exploration for Disaster Prevention Forum *(National: Cross Sectoral)*

The General Insurance Association of Japan has created a hands-on educational programme for elementary school children to help them discover the importance of disaster risk reduction. They also held the *Exploration for Disaster Prevention Forum* under the co-auspices of UNESCO, the Asahi Shimbun Co., and Nippon Volunteer Network Active in Disaster (NPO) as part of the *Tokyo Disaster Prevention Fair 2007*.

www.sonpo.or.jp

Fire and Disaster Management Agency *(National: Public Sector)*

The Fire and Disaster Management Agency (FDMA) is housed within the Ministry of Internal Affairs and Communication. They teach fire and earthquake

safety to the general public and have 'quake simulation machines that visit schools and communities to allow people to experience the feeling of a large earthquake.

www.fdma.go.jp/en

General Insurance Association of Japan Disaster Preparedness Campaign *(National: Cross Sectoral)*

The General Insurance Association of Japan has created an earthquake experience forum, educational information posting on their website, educational videos, TV and newspaper advertisements and posters and flyers to help promote earthquake insurance and disaster preparedness in Japan. They often invite experts and academics in the field to give lectures and work in cooperation with local municipalities and fire departments.

www.sonpo.or.jp

Japanese Red Cross Society *(National: Civic Sector)*

The Japanese Red Cross Society provides nationwide courses on first aid, water safety, snow safety, home nursing and child safety with the purpose of promoting health and safety.

http://www.jrc.or.jp

National Preparedness Day *(National: Cross Sectoral)*

The Japanese government leads a broad scale public participation exercise on National Preparedness Day. This event involves the private, public, civic, and education sectors and in 2007 involved more than half a million people.

http://search.japantimes.co.jp/cgi-bin/nn20070902a2.html

Shizuoka Prefecture Earthquake Preparedness Education Center *(National: Public Sector)*

Visitors to this centre learn about earthquakes and secondary risks like tsunami and fire that may follow a seismic event. Visitors can learn about risks, risk reduction strategies and emergency response through a series of interactive rooms that are both educational and entertaining. The centre website shows videos of centre educational displays and interactive activities, provides further information in an engaging format and allows web visitors to take online quizzes to test their knowledge of risk, risk reduction and emergency response.

www.e-quakes.pref.shizuoka.jp

Mexico

Civil Protection Agency *(National: Public Sector)*

The Civil Protection Agency (Sistema Nacional de Protección Civil) website provides basic and technical reports on several natural and human induced

disasters. It also has an up-to-date information bulletin to disseminate information on developing hazards and weather/volcanic watches.

www.proteccioncivil.gob.mx

Fondo Nacional de Desastres Naturales *(National: Public Sector)*

The Fondo Nacional de Desastres Naturales (FONDEN) is one of the primary mechanisms that the Mexican Civil Protection Agency uses to meet its responsibilities in the event of a disaster. The Natural Disaster Fund has two goals: 1) Prevention of events as part of a development strategy and 2) Insuring that reconstruction contributes to a reduction in vulnerability. It should be noted that the National Disaster Fund is considered complimentary support and not as the sole instrument for disaster prevention.

www.gobernacion.gob.mx

Mexican Red Cross *(National: Public Sector)*

The Mexican Red Cross has developed a 20 second spot for television and radio promoting hurricane preparedness. They have also recently begun to include risk awareness and risk reduction education in their public training programmes. Some local chapters of the organisation have been trained in vulnerability and capacity assessment, a process that can heighten public awareness and promote risk reduction activities.

www.cruzrojamexicana.org

National Disaster Prevention Centre *(National: Cross Sectoral)*

The National Disaster Prevention Centre (Centro Nacional de Prevención de Desastres) provides information on natural and anthropogenic risk developments for the government and the public, as well as actions that can be taken to mitigate the negative consequences of a disaster. The centre also has written training material for civil protection agents.

www.cenapred.unam.mx

Regional Center for Information on Disasters *(International: Public-Civic Partnership)*

The Regional Center for Information on Disasters (Centro Regional de Información sobre Desastres) has disaster education resources for Latin America and the Caribbean, including a virtual library.

www.crid.or.cr

Safety Week *(National: Public Sector)*

The Comision Nacional de Seguros y Financieros (CNSF) in Mexico seeks to enhance catastrophic risk-exposure awareness through *Safety Week* organised by an association of insurance agents in primary schools.

www.cnsf.gob.mx

Secretary of Public Education for Mexico *(National: Public Sector)*

Risk education is taught as part of the Geography of Mexico and World Geography curriculum in the first year of Secondary School in Mexico. Mexican students are taught the processes that transform geography of a region from a

sustainable development perspective, population dynamics, economic interdependence, cultural diversity, political organisation and the prevention of natural disaster at the national and international level.

www.reformasecundaria.sep.gob.mx/geografia/sitios.html

New Zealand

Ministry of Civil Defence and Emergency Management *(National: Public Sector)*

The *Get Ready, Get Thru* campaign is a new programme implemented by New Zealand's Ministry of Civil Defence and Emergency Management. The website has an assortment of material available to regional emergency management offices and other community organisations for the purpose of increasing emergency preparedness. Included in this material are information brochures, preparedness checklists, television commercials, and radio commercials that organisations can access and disseminate in their specific region. The website also has information that the general public can access for general risk awareness, preparedness, and what to do in an event.

www.getthru.govt.nz.

National Institute of Water and Atmospheric Research *(National: Public Sector)*

National Institute of Water and Atmospheric Research includes pages on climate change, its affects on weather in New Zealand and steps the public can take to reduce greenhouse gas emissions.

www.niwa.cri.nz

Red Cross New Zealand *(National: Civic Sector)*

Red Cross New Zealand provides first aid training for the general public. They also sell first aid kits and manuals.

www.redcross.org.nz

Resilience Organisations (*National: Public Sector*)

The national government of New Zealand funds the research group Resilient Organisations to research lifeline infrastructure and business organisations. The research builds tools and techniques for organisational and business continuity in the case of natural hazard events.

www.resorgs.org.nz

Te Papa Museum *(National: Public Sector)*

The Te Papa Museum of New Zealand has created an interactive website entitled *Awesome Forces*. It has information, games, stories and quizzes that help educate children about disaster preparedness.

www.tepapa.govt.nz/TePapa/English/Learning/OnlineResources/AwesomeForces

What's the Plan Stan? *(National: Public Sector)*

What's the Plan Stan? is a programme developed to inform school age children about New Zealand's potential hazards and disaster preparedness. Besides general risk awareness and prevention education, the website also contains teacher resources for teaching students about disaster preparedness.

www.whatstheplanstan.govt.nz

Portugal

National Authority for Civil Protection *(National: Public Sector)*

The National Authority for Civil Protection website is mostly focused on forest fire awareness, preparedness and prevention targeted at the public. It has a colour key showing the alert level for forest fires and a link to the *Portugal without Fires* campaign that includes four videos.

www.proteccaocivil.pt

Portuguese National Service of Civil Protection *(National: Public Sector)*

The Portuguese National Service of Civil Protection was established in order to safeguard the integrity of life and the environment from damage or from the danger of damage resulting from technological or natural disasters, catastrophes and other calamitous events. The website contains information about safety procedures, general news, natural disasters, and emergency plans. It also has information about the single European emergency call number: 112.

www.snpc.cv

Portuguese Red Cross *(National: Civic Sector)*

The Portuguese Red Cross website provides information regarding hurricane season. They also provide training for their volunteers. They have had several public awareness campaigns including, flu pandemic, summer safety, poverty and environmental stewardship. One notable campaign was the *Green Days* campaign in 2006 that educated the public on the effects of pollution and the importance of regional planning.

www.cruzvermelha.pt

The Portuguese Ministry of Education *(National: Public Sector)*

The Portuguese Ministry of Education states that all members of the educational community must work towards a 'culture of safety' in their schools. Towards this aim they have listed preventative measures and evacuation procedures in documents that are distributed to school personnel. They are currently creating teacher materials on disaster risk reduction.

www.min-edu.pt

Association of Portuguese Insurers *(National: Private-Public Partnership)*

The Association of Portuguese Insurers is working with the government to develop an insurance system for earthquake risk. An awareness campaign targeting building owners is expected to follow the creation of such a system.

www.apseguradores.pt

Spain

Consorcio de Compensacion de Seguros *(National: Public Sector)*

The Consorcio de Compensacion de Seguros (CCS) in Spain is committed to providing compensation for losses incurred as a result of extraordinary risk. The consortium is currently considering preventative campaigns and measures aimed at better preventing and reducing losses.

www.consorseguros.es

Spanish Civil Protection *(National: Public Sector)*

The website contains useful information for disaster related professionals on natural and technological risks (listed separately) and access to national documentation of disasters (which provides an extensive list of documents on disaster information, agreements, special plans, etc).

www.proteccioncivil.org

Spanish Red Cross *(National: Civic Sector)*

The Spanish Red Cross and Ericsson market unit, Iberia have collaborated on a project in disaster response and awareness. The Spanish Red Cross also works extensively in disaster response with other partners and on its own.

www.cruzroja.es

Turkey

Disaster Preparedness Education Unit *(National: Public-Education Partnership)*

The Disaster Preparedness Education Programme at Bo aziçi University, Kandilli Observatory and Earthquake Research Institute (AHEP / AHEB) has developed 4 instructor-training programmes and public education materials covering: Basic Disaster Awareness (BDA), Non-Structural Risk Mitigation, Structural Awareness for Seismic Safety, and Community Disaster Response. Programmes have been implemented with public and civic society partner organisations. The BDA programme has been implemented by the ministry of education (MEB) in 50 provinces. Master trainers have trained 20,000+ Primary school teachers who have reached more than 5 million children with the curriculum.

www.ahep.org/ev

Primary School National Disaster Education Week *(National: Public Sector)*

Disaster Education Week is part of the national primary school curriculum. Students take part in activities arranged in their local schools. There are also school drills and take home information regarding disaster preparedness. There are government sponsored contests and school visits by Civic Defence Officers.

http://cerkezkoy.meb.gov.tr/belirligunhafta.asp?belirliID=53

Earthquake Park *(Local: Education-Civic Partnership)*

The Disaster Preparedness Education Unit at Bogaziçi University operates an earthquake simulation centre provided by Rotary International, for school-children. Basic disaster awareness and earthquake insurance information is provided.

www.koeri.boun.edu.tr/aheb

Earthquake Awareness *(Local: Cross Sectoral)*

The Earthquake Awareness programme is a local programme based in Istanbul that is promoting earthquake risk awareness and preparedness. The programme is geared towards the general population including children.

www.depremeduyarliyiz.org

Istanbul Seismic Risk Reduction and Earthquake Preparedness Project *(Local: Public Sector)*

The Istanbul Seismic Risk Reduction and Earthquake Preparedness Project is a programme being developed by the Istanbul Governorship and funded by the World Bank. They are creating and implementing disaster risk reduction training curricula and campaign materials. The materials are expected to be ready by April 2008.

www.ipkb.gov.tr

Learning Safe Living with Kızılay *(National: Civic-Public Partnership)*

Learning Safe Living with Kızılay is a supplementary textbook that aims to teach children of 11-13 years and above how to deal with and reduce or prevent disasters. It is sponsored by the American Red Cross and Turkish Red Crescent Society. A teacher's edition of the textbook and a disaster calendar for the classroom are also available.

www.guvenliyasam.org.tr

Neighbourhood Disaster Volunteers *(Regional: Civic-Public Partnership)*

The Neighbourhood Disaster Volunteer (MAG) programme trains citizens at the neighbourhood level to be first responders after a disaster. MAG operates in the provinces of the Marmara Region.

www.mag.org.tr
www.magvakfi.org.tr

Safe Living *(Local: Civic-Public Partnership)*

The *Safe Living* project is a pilot project being implemented in Istanbul in coordination with the Ministry of Education and Red Cross/Red Crescent.

www.ahder.org

Turkish Catastrophe Insurance Pool *(National: Cross Sectoral)*

Turkish Catastrophe Insurance Pool (TCIP or DASK) is a non-profit public entity affiliated with the Ministry of State, to whom the Under-secretariat of Treasury reports. It was formed to provide household earthquake insurance at affordable premiums when earthquake insurance was made mandatory for all registered residential buildings within the municipality boundaries.

www.dask.gov.tr

Turkish Red Crescent *(National: Civic Sector)*

The Turkish Red Crescent Society trains volunteers in first aid and disaster response. They have also partnered with other civic sector organisations and the Ministry of Education to develop and disseminate natural hazard risk awareness and household risk reduction education for the general public and school children.

www.kizilay.org.tr

Investing in the Future *(Local: Private Sector)*

Ak Sigorta insurance operates an educational fire and earthquake simulation centre, *Investing in the Future* for school groups ages 7-14 in Istanbul, which teaches disaster risk reduction and creates insurance awareness.

www.bilimmerkezi.org.tr/yenideneybirimleri.html

United Kingdom

Association of British Insurers *(National: Private Sector)*

The Association of British Insurers (ABI) in the United Kingdom provides general information on flooding on their website. The association also works in collaboration with the Environment Agency to support the availability of flood insurance through local insurers.

www.abi.org.uk

Benfield Hazard Research Centre, London *(National: Education-Private Partnership)*

The Benfield Hazard Research Centre, affiliated with University College, London transfers natural hazard and risk research, practice, and innovation from the academic environment to business, government and international agencies. They also have an education programme for insurers regarding natural hazards.

www.benfieldhrc.org

British Red Cross *(National: Civic Sector)*

The British Red Cross teaches first aid courses and sells first aid kits on their website.

www.redcross.org.uk

Environmental Agency *(National: Public Sector)*

The Environmental Agency of the United Kingdom has responsibility for developing and disseminated flood risk and zonation maps. Their website has a postal code search feature where individuals can view flood maps for any local area.

http://environment-agency.gov.uk

Geo-World *(Local: Public Sector)*

Geo-World.org is part of the Beal High School Website in the United Kingdom. It showcases the innovative classes that are being taught by in geography and provides information about natural hazards and preparedness. It also includes a link to the *How Prepared Are You* website.

www.geo-world.org

How Prepared Are You? *(National: Civic Sector)*

This interactive website was created by a secondary school teacher in the United Kingdom. It teaches about different hazards that students may encounter when leaving the United Kingdom to go on vacation and what to do before, during and after a disaster occurs.

www.edu4hazards.org

Know Before You Go *(National: Public Sector)*

The *Know Before You Go* campaign encourages British nationals to be better prepared for their overseas trips by learning about the hazards in their destination country. The website and toll-free phone number have travel advice for over 200 countries, including information about natural disasters.

www.fco.gov.uk/travel

Lessons Learned Review of 2007 Summer Flooding *(National: Public Sector)*

A flood review website has been created by Sir Michael Pitt, the independent chair overseeing the government's Lessons Learned review regarding the 2007 summer flooding. Citizens are asked to log on and share their experiences. Sir Michael Pitt will also be 'visiting affected communities, talking to residents, local businesses and members of front-line services to get their first-hand experiences.'

www.cabinetoffice.gov.uk/floodingreview

London Climate Change Partnership *(Local: Public sector)*

The London Climate Change Partnership (Greater London Authority) has created leaflet to raise public awareness and change policy in the London regarding climate change.

www.london.gov.uk/climatechangepartnership

Met Office *(National: Public Sector)*

The Met Office has a range of activities and material based around the requirements of the national curriculum to help teachers and students understand weather and climate. The website is updated regularly for severe weather forecasts and gives up to date information about weather in all areas of the globe. It has information for the general public about what to do when severe weather is forecast, before, during and after the storm.

www.metoffice.gov.uk

Preparing for Emergencies Campaign *(National: Public Sector)*

The Preparing for Emergencies website is run by the Civil Contingencies Secretariat. It is based on the pamphlet that was created in 2004 by the same name. The pamphlet and website advise citizens on what they can do to reduce the risk of emergencies and how to cope with emergencies when they do occur. The pamphlet is available on the website and is produced in 18 languages, English large print, audio tape, and Braille.

www.preparingforemergencies.gov.uk

Scottish Environmental Protection Agency *(Regional: Public Sector)*

The Scottish Environmental Protection Agency (SEPA) has information regarding their 24 hour flooding information line, live flood warning information, and tips on how the general public can prepare for flooding.

www.sepa.org.uk/flooding

United Kingdom Environment Agency *(National: Public Sector)*

The United Kingdom Environment Agency has information regarding their flood line, current flood warnings in place, actions that the general public can take to prepare for flooding, and a flood guide for older people.

www.environment-agency.gov.uk/subjects/flood

United States

3 Days, 3 Ways *(Regional: Public-Civic Partnership)*

3 days, 3 ways is a local campaign in the western United States that includes an interactive video with general preparedness information and quizzes after each section. The campaign has also been advertised in the media and pamphlets have been distributed.

www.govlink.org/3days3ways

72hours.org *(Local: Public Sector)*

A City of San Francisco programme, 72hours.org addresses all hazards and provides public information urging people to make a plan, build a kit and get involved. Online information is provided in English, Spanish and Chinese. A 24/7 text-based emergency information service is broadcast to wireless devices.

www.72hours.org

The American Red Cross *(National: Civic Sector)*

The American Red Cross' main message is to get make a plan, prepare a kit, and be informed. There is specific information regarding different types of disasters, as well as disaster preparedness kits for sale.

www.redcross.org

Disaster Management e-gov *(National: Public Sector)*

The information on the Disaster Management e-gov website is intended to reach five overlapping audiences: (1) Local / State / Tribal Governments, (2) individual Citizens, (3) private sector businesses, (4) non-Government organisations, and (5) Federal agencies. The intergovernmental audience is the primary focus at present, and that audience is seen as composed of: political and civil service leadership, emergency managers, homeland security advisors, and first responders (including fire and law enforcement, emergency medical services, etc.). There is also a community section that gives the general public a list of all the emergencies in the nation at any given moment, the level of national security, recent news feeds and links to local resources.

www.disasterhelp.gov

Earthquake Country Alliance *(Regional: Cross Sectoral)*

The Earthquake Country Alliance in Southern California has launched a multi-year public education campaign entitled *Dare to Prepare*. The first year of the campaign, *Shift Happens: Secure your Space,* is focused on non-structural risk reduction directed at home and business owners. A free guide has been distributed through local newspaper promoting Seven Steps to Earthquake Safety. *The Great California Shakeout*, a mass-participation simulation exercise is planned for 2008.

www.earthquakecountry.info

Federal Alliance for Safe Homes *(National: Cross Sectoral)*

The Federal Alliance for Safe Homes has information for homeowners and their children regarding risk awareness and reduction. They have specific instructions for how to incorporate disaster resistant features in an existing home.

www.flash.org

Federal Emergency Management Agency *(National: Public Sector)*

The Federal Emergency Management Agency (FEMA) has general and specific disaster information, risk maps, and preparedness information for a wide range of hazards.

www.fema.gov/hazard

FEMA for Kids *(National: Public Sector)*

This section of the FEMA website is dedicated to educating children about disaster preparedness. It has interactive games they can play, printable pages and informational sheets to fill out with their families.

www.fema.gov/kids

Firewise Communities Program *(National: Public Sector)*

The Firewise Communities Program, formed out of a multi-agency collaboration, aims to promote community responsibility in reducing wildfire risk through environmental stewardship, urban planning, building code restrictions, and individual preparedness. It provides educational resources for local governments, communities and individuals. The programme offers conferences, workshops, and printed material. On their website, an online library, forum blog and chat room can be found in addition to their education materials.

www.firewise.org

Flood Smart *(National: Public Sector)*

Flood Smart is a national site dedicated to teach citizens about flooding and flood insurance. It has information about flood insurance and checklists for hurricane preparedness.

www.FloodSmart.gov

Guided By History *(National: Private Sector)*

Wells Fargo Bank has a blog site that was launched for the 100th anniversary of the great California Earthquake. It discusses famous historical events and how they relate to our lives today, including famous historical disasters. There are also links to disaster preparedness information on the site.

http://blog.wellsfargo.com/GuidedByHistory

Home Safety Council *(National: Civic Sector)*

The Home Safety Council is a national non-profit organisation dedicated to preventing home related injuries. The website has information for homeowners and children regarding all aspects of home safety, including disaster preparedness. *The Get Ready with Freddy* campaign teaches children how to prepare for disasters using a singing flashlight that is "lighting the way to safety."

www.homesafetycouncil.org

Hurricane Strike *(National: Public Sector)*

FEMA, National Weather Service, American Red Cross and Weather Channel have developed "Hurricane Strike!" a multimedia learning package on hurricanes for middle school students. The package integrates hurricane safety and preparedness with science instruction which provides an engaging interactive learning environment.

http://meted.ucar.edu/hurrican/ strike/

Institute for Business and Home Safety *(National: Private-Civic Partnership)*

The Institute for Business & Home Safety works on behalf of member insurance companies to ensure that model building codes and industry standards incorporate the latest disaster-resistant features. They have information on their site for homeowners and builders regarding home preparation for natural disasters.

www.ibhs.org

Map Modernization *(National: Public Sector)*

Map Modernization (Map Mod) is a five-year initiative by FEMA to remap floodplains in the United States and provide digital maps accessible to the public via the internet. A significant component to Map Mod is public awareness and education. When the mapping is complete, citizens should be able to view their flood risk anywhere in the country.

https://hazards.fema.gov

Masters of Disaster *(National: Civic Sector)*

The *Masters of Disaster* Curriculum Kit created by the American Red Cross contains ready-to-go lesson plans, activities, and demonstrations on disaster-related topics that teachers can incorporate within core subject areas. It also has a home version that families can use with their children at home.

www.redcross.org/disaster/masters

National Association of Insurance Commissioners *(National: Private Sector)*

The National Association of Insurance Commissioners (NAIC) in the United States provides insurance information for the general population, including some information regarding how natural hazards can affect insurance.

www.naic.org

National Disaster Education Coalition *(National: Cross Sectoral)*

The National Disaster Education Coalition is composed of national agencies and organisations that have developed, *Talking About Disasters: Guide for Standard Messages*, which provides standardised safety messages for about 13 hazards and general disaster preparedness topics.

www.redcross.org/disaster/disasterguide

National Oceanic and Atmospheric Administration *(National: Public Sector)*

The National Oceanic and Atmospheric Administration (NOAA) has information for the public regarding weather related natural disasters on their website. The agency is also developing Hazard Education and Awareness Tool (HEAT), an interactive web mapping tools that allows some areas to view tsunami risk maps of their neighbourhoods.

www.nssl.noaa.gov

Project Impact, Seattle *(Local: Cross Sectoral)*

Project Impact Seattle was a pilot programme that was carried out by the Seattle Office of Emergency Management and funded by the United States government. The goal was to make an impact on disaster reduction in Seattle, Washington. The focus of the pilot project was home mitigation.

www.seattle.gov/emergency/programs/projectimpact/retrofit.htm

Ready Campaign *(National: Public Sector)*

The Ready campaign is a national preparedness campaign that was launched by the United States Department of Homeland Security in 2003. The campaign stresses being prepared for all emergencies by getting a kit, making a plan, and being informed. There is specific information about many different types of disasters and a links for pet owners, the elderly, businesses, children and minority language speakers. The campaign has included a national advertising campaign and sports sponsorship.

www.ready.gov

State Farm Insurance *(National: Private-Civic Partnership)*

As a major insurance agency within the United States, State Farm Insurance promote risk awareness and risk reduction education by giving grants to non-profit organisations educating home-buyers and home-owners about natural hazard and other risks and risk reduction strategies. Their granting programme also covers public education on disaster response preparedness and recovery.

www.statefarm.com

Team Safe-T *(Local: Public-Civic Partnership)*

Publicly-funded, this group provides school-based education materials to teachers of grades K-12, and links for families in the state of California.

www.teamsafe-t.org

United States Department of State *(National: Public Sector)*

Travel information for United States citizens travelling abroad. This information includes natural hazards in destination countries and safety tips for Americans travelling abroad.

http://travel.state.gov/travel/cis_pa_tw/cis/cis_1765.html

United States Geological Survey *(National: Public Sector)*

The United States Geological Survey produces maps, imagery, and publications on all hazards. They also have educational materials for teachers and students, including science fair ideas, online games, photos, information on earthquake science and scientists, and interactive educational resources.

www.usgs.gov/hazards

Weather Ready *(National: Public Sector)*

The Weather Channel has created *Weather Ready,* a website where you can log in and create a family preparedness plan, learn about dangerous weather in your area, and watch videos about severe weather safety.

www.weather.com/ready

International

Asian Disaster Risk Reduction Network (*International/Regional: Civic Sector*)

A coalition of more than 25 non-governmental agencies in Asia, involved in disaster risk reduction work, and public awareness. ADDRN worked with Asian Disaster Reduction Center on the translation and localisation of the Tsunami education story, "Inamura-no-hi" into 8 Asian languages, for use in school and community-based education. Members took materials further, innovating with cultural arts and lesson plans. ADRRN plans to similarly support future educational materials localisation efforts.

www.adrrn.net/index.asp

Climate Wise *(International: Private Sector)*

Lloyd's is the world's leading insurance market providing specialist insurance services to businesses in over 200 countries and territories. The Climate Wise principles provide a framework for insurance companies worldwide to set out how they will build climate change into their business operations. The principles have been developed following consultation between The Prince of Wales's Business & the Environment Programme, Lloyd's, the ABI, and other insurance market participants.

www.lloyds.com

Disaster Risk Management and Learning Program *(International: Public Sector)*

The World Bank Institute Disaster Risk Management Learning Program provides online courses and printed materials to promote proactive disaster risk management practices by raising awareness among key stakeholders and by advancing the analytical skills and professional knowledge of development practitioners in specific areas of disaster risk management.

http://web.worldbank.org

Eduplan Hemisferico *(International: Public Sector)*

This initiative of the Organization of American States (OAS) promotes the adoption of policies for safe schools, disaster risk reduction education, and schools as hubs for community education. This policy advocacy and awareness effort has spurred several important initiatives in Latin American.

www.oas.org/nhp/nhpcatalog/Webpages/PPNAccionesHemsf13.htm

The European and Mediterranean Major Hazards Agreement (EUR-OPA) *(International: Public Sector)*

Twenty-five members states are party to the Council of Europe' Major Hazards Open Partial Agreement which reinforces cooperation between member sates to ensure better prevention, protection and organisation of relief. Ministerial Sessions raise awareness among policy-makers, adopting resolutions and making recommendations regarding knowledge transmission, education on disaster reduction, school curricula and teacher training (Council of Europe, 2005, 2006).

www.coe.int/T/DG4/MajorHazrds/Default_en.asp

The European Commission's Humanitarian Aid Department *(International: Public Sector)*

The European Commission's Humanitarian Aid Department (DG ECHO) launched the DIPECHO programme in 2006 to invest finances in disaster preparedness. This programme now covers 6 disaster-prone regions and has invested more than EUR 120 million since its inception. The projects funded by the programme include simple and inexpensive preparatory measures, often implemented by the communities themselves.

http://ec.europa.eu/echo/field/dipecho/index_en.htm

Global Facility for Disaster Reduction and Recovery *(International: Public Sector)*

The World Bank Global Facility for Disaster Reduction and Recovery (GFDRR) is developing various instruments to support its client governments to integrate risk reduction strategies in development processes, building capacities at the local and national levels to "disaster proof" the Millennium Development Goals and supporting ongoing UNISDR processes.

www.worldbank.org/hazards/gfdrr

International Federation of Red Cross and Red Crescent Societies *(International: Civic Sector)*

Part of the IFRC's global agenda for 2006-2010 is to scale up their actions with vulnerable communities in disaster risk reduction. Among collaborative, regional public education efforts by RC societies, a set of community educational workbooks on disaster risk reduction has been produced in the Americas related to Prevention of Disasters to Rural Aqueducts, Community Dialogue on Water and Climate, Floods, Community Maintenance of Schools and Early Warning.

www.ifrc.org

Mainstreaming Disaster Risk Reduction into School Curriculum *(International: Civic-Public Sector Partnership)*

The Asian Disaster Preparedness Center's Regional Consultative Committee on Disaster Management is currently developing RCC Guideline 6.1 "Mainstreaming Disaster Risk Reduction into School Curriculum". These guidelines for Ministries of Education in Asia are intended to guide the introduction and infusion of disaster risk reduction into school curricula. Priority Implementation Projects are designed to kick-start these efforts in selected countries.

www.adpc.net

Organisation for Economic Cooperation and Development *(International: Public Sector)*

The Organisation for Economic Cooperation and Development (OECD) has developed several publications on managing disasters, including: *Large-Scale Disasters: Lessons Learned, Catastrophic Risks and Insurance, Terrorism Risk Insurance in OECD Countries* and *Keeping Schools Safe in Earthquakes*. Their projects include: *Futures Project on Risk Management* (which has produced studies of floods, earthquakes and a variety of hazards in France, Japan, U.S. Denmark, Italy, Norway and Sweden) and *The OECD Directorate for Education, Programme on Educational Buildings* (which has led several meetings on school safety issues and

published *Educational Facilities and Risk Management: Natural Disasters*).Their recommendations on Safe Schools have been adopted by 30 countries.
www.oecd.org

United Nations Centre for Regional Development *(International: Public-Civic Partnership)*

The UNCRD, based in Hyogo, Japan is conducting a multi-year School Earthquake Safety Initiative "Reducing Vulnerability of School Children to Earthquake" in Fiji, India, Indonesia and Uzbekistan. This project includes public-awareness raising efforts for school safety. Other projects promote community-based disaster risk reduction.
www.hyogo.uncrd.or.jp

United Nations Decade of Education for Sustainable Development 2005-2014 (DESD) - *(International: Public-Civic Partnership)*

The UNESCO-led education effort is to encourage changes in behaviour that will create a more sustainable future in terms of environmental integrity, economic viability, and a just society. Specific initiatives within this framework, particularly in Asia, address stocktaking and policy advocacy for disaster risk reduction education.
http://portal.unesco.org/education/

United Nations International Strategy for Disaster Reduction *(International: Public-Civic Partnership)*

The UN/ISDR aims at building disaster resilient communities by promoting increased awareness of the importance of disaster reduction as an integral component of sustainable development, with the goal of reducing human, social, economic and environmental losses due to natural hazards and related technological and environmental disasters. The World Conference on Disaster Reduction which adopted The Hyogo Framework for Action, and the biennial Global Platform meetings and campaigns focus the attention of national decision-makers on disaster reduction. The Disaster Reduction Begins in Schools Campaign (2005-2007) in particular highlighted the importance of awareness and risk reduction education. Follow-on activities of the Knowledge and Education Platform and Regional Task Forces are expected to continue this work. Prevention Web provides a common information platform for the disaster risk reduction community. It plans to launch the Global Online Library for Disaster Risk Reduction developed in association with UNESCO. This online library will share and permit evaluation of public education and children's education materials and strategies.
www.unisdr.org
www.preventionweb.net

Credit: Some Macroeconomic, Market and Consumer Implications

Selected Issues and Trends from Four OECD Countries

Mario Fortin, Ph. D.

Jacques Préfontaine Ph. D.

Faculté d'administration
Université de Sherbrooke

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Introduction

Financial consumers are facing paradoxical situations. On the one hand, they are overly solicited to use credits on various forms. On the other hand, segments of the population do not have access to credit. In this paper, we examine some emerging issues regarding consumer protection and information in four OECD countries: Australia, Canada, the United Kingdom and the United States. These four countries have much in common but nevertheless develop their own specific experience. By comparing their recent experience we identify some questions of emerging importance.

To realise this goal, we analyze in the first section the extent of credit use. Because residential mortgages represent the main source of household debt, our survey leads us to link the trends in total indebtedness to the housing booms and busts. We identify securitisation has an important new feature of mortgage funding. We also look at the causes for the growing importance of revolving credit and show that a large part seems to be due to a substitution from non revolving credit. Nevertheless, total indebtedness seems to translate into a growing financial stress as personal insolvencies are on the rise.

In section two, we look more closely at two important issues in the mortgage market that have implication in credit availability of higher risk borrowers, that is, the growing presence of securitisation and that of mortgage brokers. We explain how the incentives of market participants are modified because the mortgage market generated more up-front income to lenders and brokers. This has led to a reduced pricing of risk. This section continues with a discussion regarding what we identify as important current issues, such as the regulation of mortgage brokers, the adequate pricing of risk and the cost of credit disclosure in mortgage loans in the US. Finally, we explore whether the subprime crisis is a failure in consumer protection.

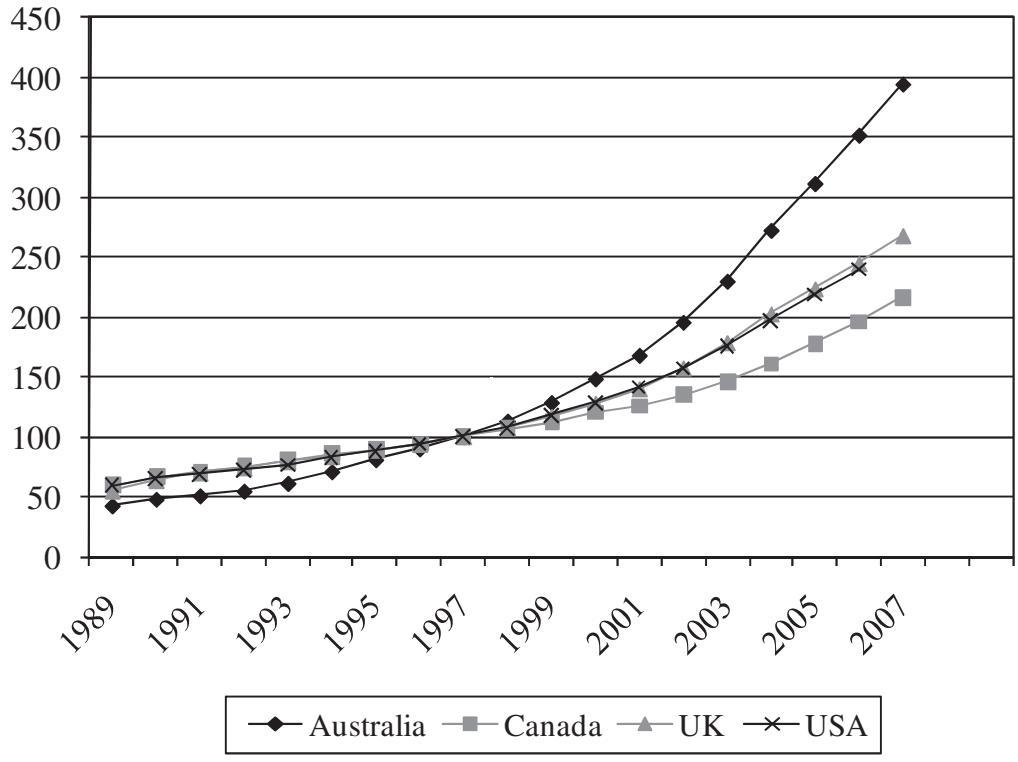
In section three, we define alternative banking, the nature of the operations on this alternative market and compare the extent of alternative banking in the different countries. Then we look at challenges in regulating alternative banking.

1. The extent of household credit use

1.1 Recent trends in the value of debt outstanding

The role of this section is to provide, as a background to the discussion, a description of recent trends in the extent of households' credit use in Australia, Canada, UK and the USA from a macroeconomic perspective. The changing importance of credit use can be presented with different perspectives but the most common is to consider, as in Figure 1, the outstanding balance of all loans contracted by households in each country. To facilitate the comparison, data are presented in index with 1997 serving as the base year.

Figure 1. Households total debt (1997=100)

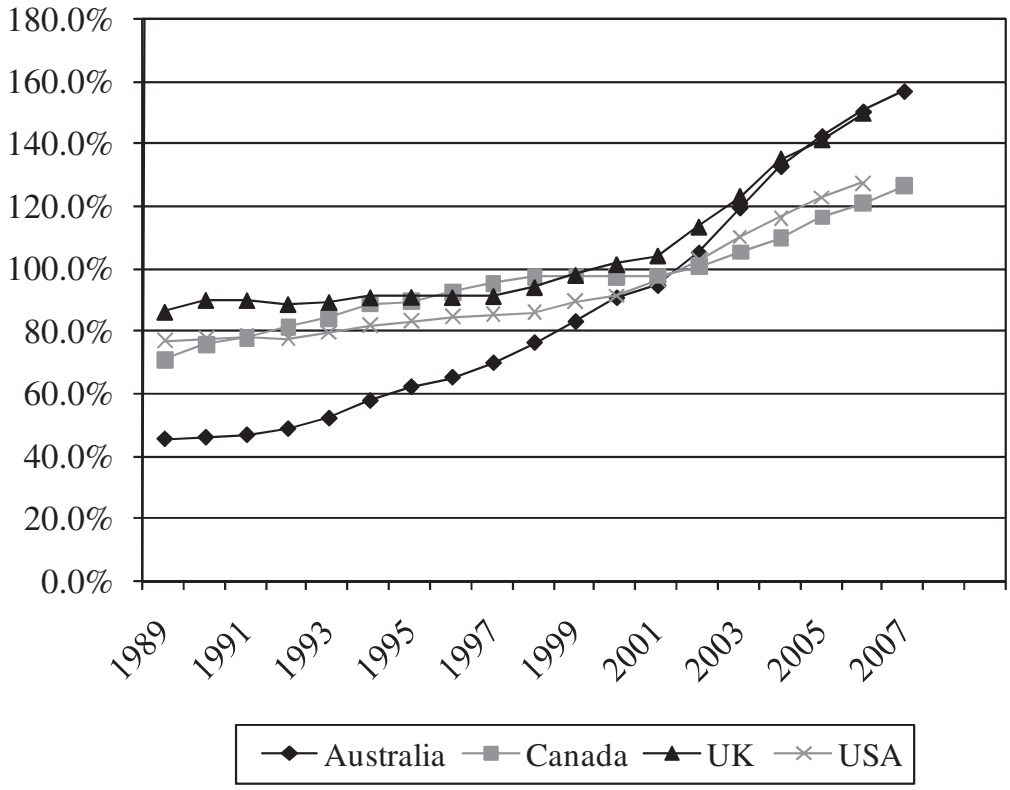


Sources: Reserve Bank of Australia, Statistics Canada, Bank of England and Federal Reserve Board.

The most significant feature is that these four countries experienced a constant increase in the value of credit extended to households, and the growth has clearly accelerated since 2000. Australia saw the fastest rise in household credit, which quadrupled between 1997 and 2007. Australia's rapid increase is explained in part by a progressive relaxation of financial regulation, which may have lead to a "catch-up" effect with respect to other countries. The three other countries followed similar paths until 2000, but Canada lagged behind UK and USA in recent years.

Macroeconomic conditions have an important influence on credit. Inflation has remained low since the beginning of the 90s in these countries, so the upward trends in indebtedness reflect a generalised increase in real household debt. As to real economic growth, it has been unevenly distributed. To adjust for real income, Figure 2 presents the evolution of the ratio of debt to disposable income. Australia has the fastest growth rate in household debt but the relative importance of the debt burden changes substantially. Indeed, Australia started with an indebtedness ratio of only 45% in 1989, only half the debt ratio observed in the UK at the same time. By 2002, all four countries had very similar debt-to-income ratios, just over 100%. Thereafter, UK and Australia diverged from North America, experiencing an acceleration in the debt-to-income ratio which now exceeds 150%. Throughout the entire time frame, Canada and the USA followed a very similar path, the ratio increasing from below 80% to slightly above 120%.

Figure 2. Households' debt as a % of disposable income



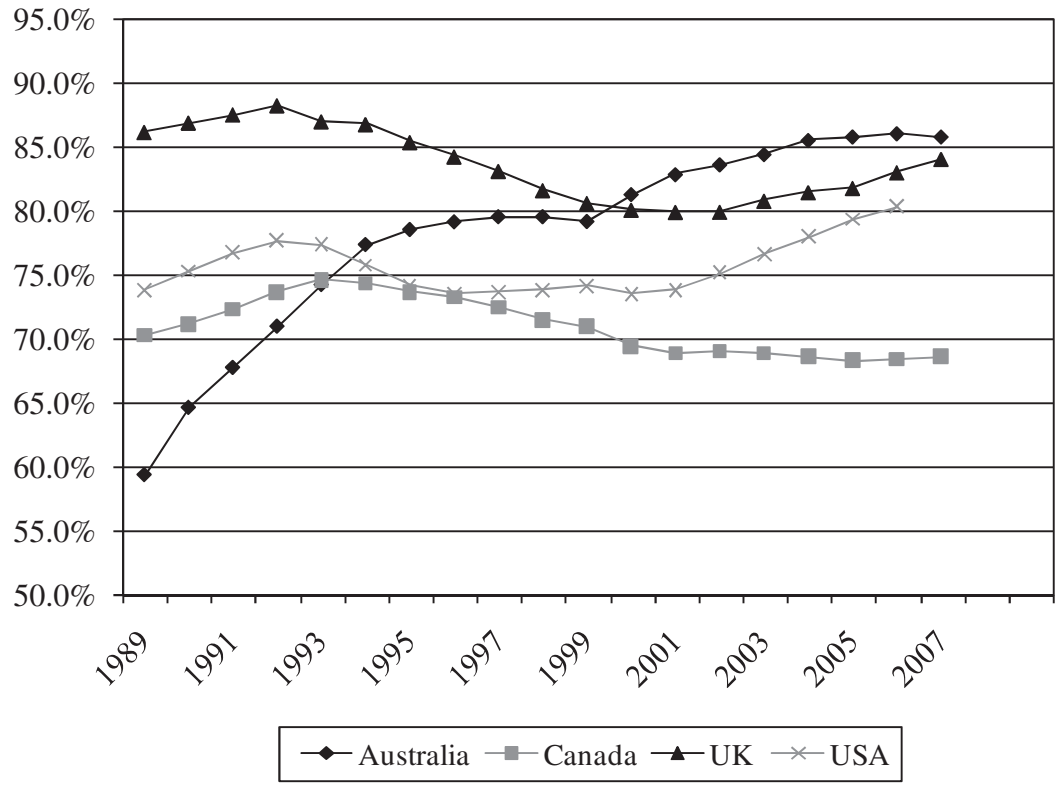
Sources: Reserve Bank of Australia, Australian Bureau of Statistics, Statistics Canada, Bank of England, UK National Statistics, Federal Reserve Board, Census Bureau and authors' calculation.

Households' debt has many components and Figure 3 shows the composition between, on the one hand, mortgage loans and, on the other hand, all other unsecured personal debts, that is, personal loans, lines of credit and credit cards' outstanding balances. Not surprisingly, home mortgage is by far the most important component. The share of mortgage loans has changed the most in Australia over the period, rising from a low of slightly below 60% in 1989 to a high of 85% in 2007. In the UK, the share declines slowly between 1992 and 2001 from 88% to 80% but, as in the US, regained some ground since then. As for Canada, after having declined from its peak of 75% in 1993, mortgage share has remained almost stable below 70% since 2000.[1]

1.2 Home mortgages and the housing boom and bust

Given their relative importance, home mortgage loans represent a substantial proportion of households' total debt. Since mortgage financing mirrors real estate activities, looking at the housing market is needed to understand recent trends in credit use. Indeed,"…most borrowers find mortgage credit necessary to finance their home purchase, and they seek the largest loan available based on their collateral."[2]

Figure 3. Mortgage loans as a % of households' debts



Sources: Reserve Bank of Australia, Statistics Canada, Bank of England and Federal Reserve Board.

Credit use must take into account the limit on the amount a household can borrow.[3] Liquidity-constrained households are likely to borrow to the limits set for by lenders, this is an important feature in understanding the recent expansion in credit. Lenders limit the value of home borrowing in two ways: the loan value cannot exceed a certain proportion of the value of the collateral and the monthly payments must be lower than a specific fraction of the household's current income. Whichever is the lowest determines the consumer's effective borrowing constraint.

Obviously the causality between housing demand and mortgage demand is bidirectional. Rising home prices allow for more borrowing, but this is limited only to households whose current income is not the effective borrowing constraint. At the opposite, higher economic activity and personal income, a lowering in credit cost or loosening of lending standards allow consumers to borrow more, as long as they are willing to mortgage against a higher priced house. Thus, the causality between credit and home prices is considered to be stronger from the former to the latter, although an accelerator effect can be triggered by the housing boom.[4]

The most important factor behind the recent rise in mortgage debt is then the lower nominal interest rates that resulted from the low inflation of the last fifteen years. That enabled households to service higher mortgage loans: that is, the borrowing constraint based on income has been eased considerably. Tsatsaronis and Zhu (2004) identify, in addition to low interest rates, differences

in the yield curve and the proportion of floating rate mortgages as additional factors explaining why housing prices' reaction to interest rate varies between countries.[5]

Housing has increased dramatically in many OECD countries in recent years, albeit with wide difference in house price growth. Recent movements in housing prices in the UK and Australia, two countries in which variable rate mortgages are very common, mirror those of mortgage debt. A housing boom started at the end of the 90s in both Australia and the UK while a similar movement only began to show for US and Canada. Indeed, house prices in North America took momentum mostly after 2001. In the case of the US, fixed rate mortgages still continue to be the most popular, although there has been a growing popularity of adjustable rate mortgages (ARM) in recent years, mostly on the subprime market.[6] Interestingly, Canada's mortgage market is still dominated by ARM, with three to five year fixed terms being very common, and yet, did not show (until recently) as much home price increases as in other countries.

As long as house prices keep going up, homeowners become equity-rich relatively to their income and are tempted to raise cash against the higher value of their house to sustain a higher consumption level. This so-called home-equity extraction (also called mortgage extraction), which takes place either through mortgage refinancing, home equity loans or by raising money when selling a home, has rapidly grown in the last five years.

However, the higher leverage increases the risk associated to a change in assets value. The actual housing crisis in the US shows the pernicious effect that develops when home price deflation happens. When the collateral is less than the outstanding balance of the mortgage loan, refinancing is no longer an option to homeowners unable to service their debt, so the only option left is foreclosure. These problems are still developing in the US and have yet to affect other countries in similar ways. Australia and the UK now seem exposed to similar risks, given the importance of home price increases, the popularity of adjustable rate mortgages, the growing importance of non-conforming mortgage loans and, in Australia, the numerous increases in interest rates dictated by the Reserve Bank of Australia. Canada on the other hand seems to have experienced lower home price increases and is consequently less vulnerable to a downturn in housing.

1.3 The growing importance of securitisation

The mortgage market has traditionally been dominated by deposit taking institutions, which are using their deposits as the main source for loan financing. The most striking change that occurred in the mortgage market is the growing importance of securitisation. This development is changing the relationship between borrowers and lenders and provides new challenges for regulators and consumer protection.

Securitisation occurs when a pool of (usually illiquid) assets is constituted and offered as collateral for a newly formed security, called asset-backed securities (ABS). Mortgage lenders sell their mortgage claims to the buyers of the security (called mortgage backed securities MBS) whose, in effect, are acquiring the income flow generated by the pool of mortgages. In securitisation, to protect the cash flows against the risk of lender's bankruptcy, the effective property of mortgages is transferred to a separate legal entity called Special purpose vehicle (SPV). This additional protection increases the attractiveness of MBS, allowing

for a lower interest rate on these type of securities. Further securitisation can occur down the line and this process, explained more completely in section 3.1, helps in reducing the financing cost of mortgages.

But since securitisation facilitated mortgage financing independently from gathering deposits, it also led to a growing presence of non deposit specialised mortgage lenders which depended on their capacity to package and sell securities to finance their lending. The way to report and compile data about mortgage origination being country specific, a comparable figure as to the importance or securitisation in mortgage markets can hardly be presented. Leaving this difficulty aside, we nevertheless present some information on the importance of non traditional financing in mortgage. In 2007, 25% of mortgages loans were securitised in Australia (Reserve Bank of Australia). In Canada, as of December 2007, National Housing Act's MBS[7] represented 20% of the mortgage market (Bank of Canada) while MBS emitted by special purpose corporations were worth 3% of the total. In the UK, mortgage securitisation has also reached approximately 20% of total origination at the same time (Bank of England).[8] We did not have access to comparable data on the US mortgage market. The Flow of Funds Account of the United States reports that the share of ABS issuers in households' total liabilities was around 20% in 2006. Rosen (2007) reports however a much higher share for the American mortgage market, with ABS representing close to 60% of total mortgage debt outstanding, a share that has matured since 2000.

The recent importance of ABS in financing mortgages has implications for the effectiveness of banking regulations in protecting consumers. Indeed, by providing an alternative to deposits, the consumer protection provided by regulating deposit taking institutions can be bypassed by specialised lenders. Moreover, since non deposit mortgage lenders sell the mortgages' cash flows to investors, they are more likely to accept higher risks in lending as long as the pricing of these risks is not completely reflected in the securities. Finally, since these new lenders want to penetrate the mortgage market, they rely more heavily than established financial institutions on mortgage brokers to market their mortgage products. This is changing the relationship between lenders and borrowers and reduces the reluctance to accept risk. We discuss in section 2 the role and impact of mortgage brokers in this new market.

1.4 Credit cards: over indebtedness or substitution with instalment loans?

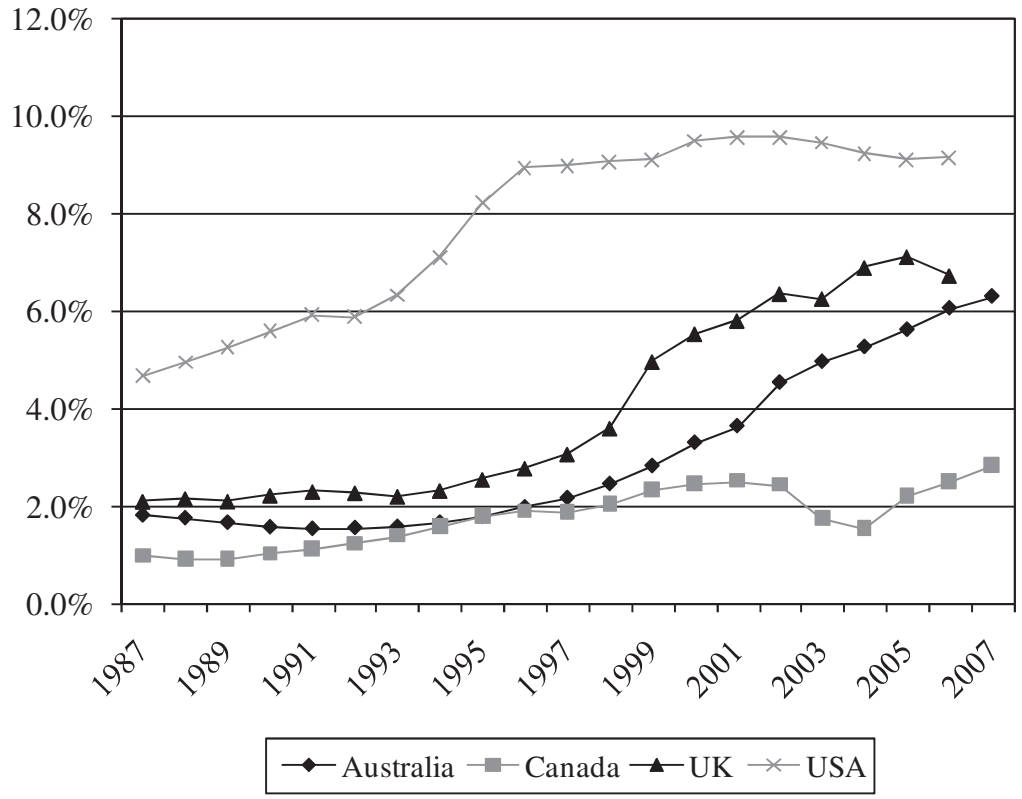
We have seen that personal debt has grown in parallel with the increase in mortgage indebtedness. But while mortgage demand is tied to the demand for housing, unsecured debt originates from an unbalance between the lifetime distribution of income and the desired level of expenditure. Because of moral hazard, lenders severely limit the amount of unsecured credit made available to a household. This creates prevalent situations in which customers can suffer from liquidity constraints.[9]

Personal debt takes two forms. Instalment loans, which are usually associated with the purchase of a durable good, most often a car, and revolving credit. Instalment loans are repaid with interest in equal periodic payments extended over the length of the amortisation period. Revolving credit differs in many aspects. A line of credit is extended to customers who may use it as desired, up to the certain pre-authorised limit. This credit may be paid in full,

any time or upon receipt of a monthly statement, or to be revolved, given that the interest or a minimum charge is paid. The two main forms or revolving credit are personal credit line and credit cards. We will concentrate our attention on the latter.

Figure 5 shows the extent of this type of credit in the four countries. Note that because of difficulties in accessing data specifically related to credit card outstanding balance in the US, data for this country concerns all personal revolving credit and are not comparable with those in other countries. Also, Canadian data are an extrapolation based on the time behaviour of credit card debts extended by chartered banks, and may also not be comparable. Yet, the general picture shows the growing importance of this type of debt. Once again, Australia and the UK recently observed a rapid increase while the growth rate is much lower in Canada.

Figure 5. Credit cards debt as a % of disposable income



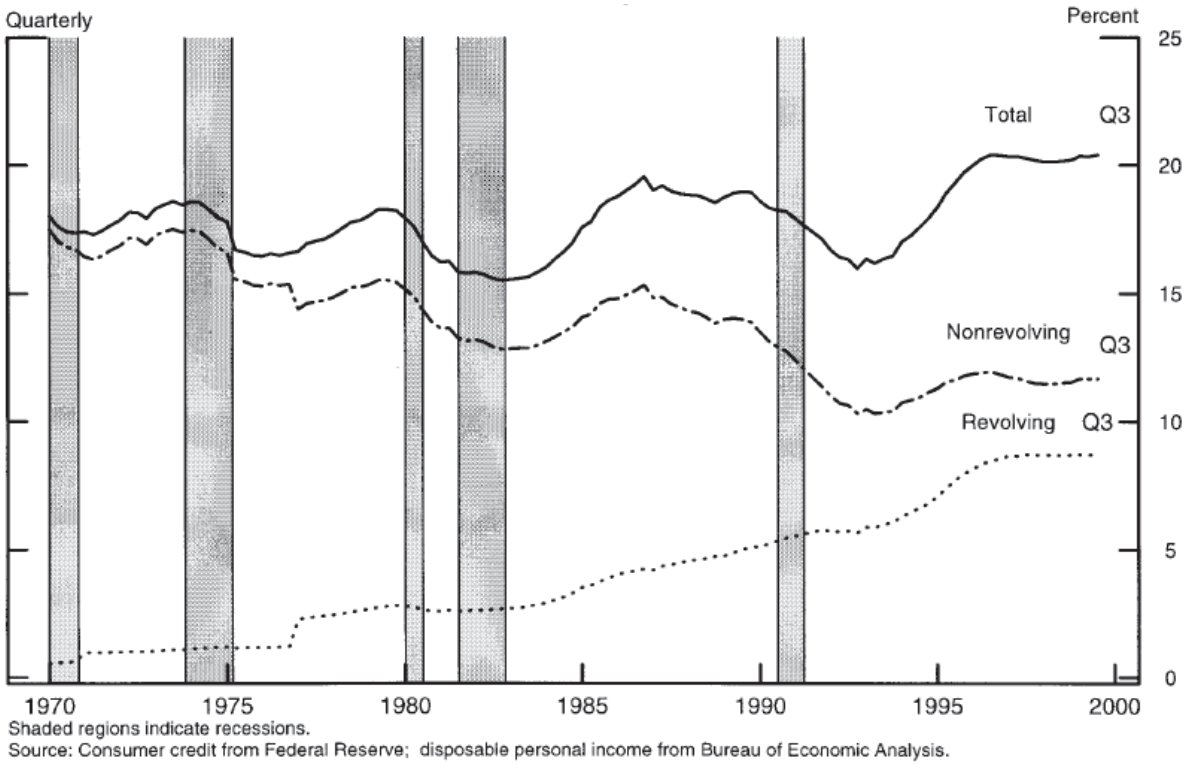
Sources: Reserve Bank of Australia, Statistics Canada, Bank of England and Federal Reserve Board. The value shown for Canada have been extrapolated from data on chartered banks using the 2005 *Survey of Financial Security*. Data for the US are for personal revolving credit and include a larger category of debts than credit cards.

Credit cards present dual product characteristics, being both a line of credit and a convenient means of payment. As a means of payment, credit cards compete with debit cards and banks offer incentives to credit cards use for payment, like the possibility of accumulating rebates or points that have

monetary values, but also offer to the card holder a "free float", that is, a period of time without credit charge. The reasons for these incentives are twofold. First, banks receive fees from merchants when a credit card is used. Second, banks charge an interest rate on the monthly balance that is revolved to the following month at a rate higher than the rate charged on a personal line of credit. A customer who takes full advantage of the incentives and who pays the balance every month benefits from a very convenient and advantageous means of payment. In the 2004 US Survey of Consumer Finances, of the families with credit cards, only 58 percent carry an outstanding credit card balance.[10] Further, the 1998 US Survey of Consumer Finances showed that almost half of the sample of consumers used credit cards solely as a convenient means of paying for goods and services.[11]

Does the increased importance of credit card outstanding balances indicates consumers' excessive indebtedness? Figure 6, taken from Maki (2001) puts personal revolving credit in a long-run perspective for the US. Between 1970 and 1999, the ratio of consumer credit to disposable income has fluctuated between 15% and 20%, with a clear cyclical pattern showing an increasing ratio during economic expansion phase and a decline beginning before each recession (in grey). However, revolving credit has grown substantially, starting to about 1% in 1970 to reach 9% in 1999, with a corresponding decrease in instalment loans. This long view clearly suggests that most of the increased use of revolving credit is a substitution that has operated between these two different forms of personal credit.

Figure 6. Composition of personal debt in the US as a % of disposable income



Source: D. Maki, 2001, p. 45.

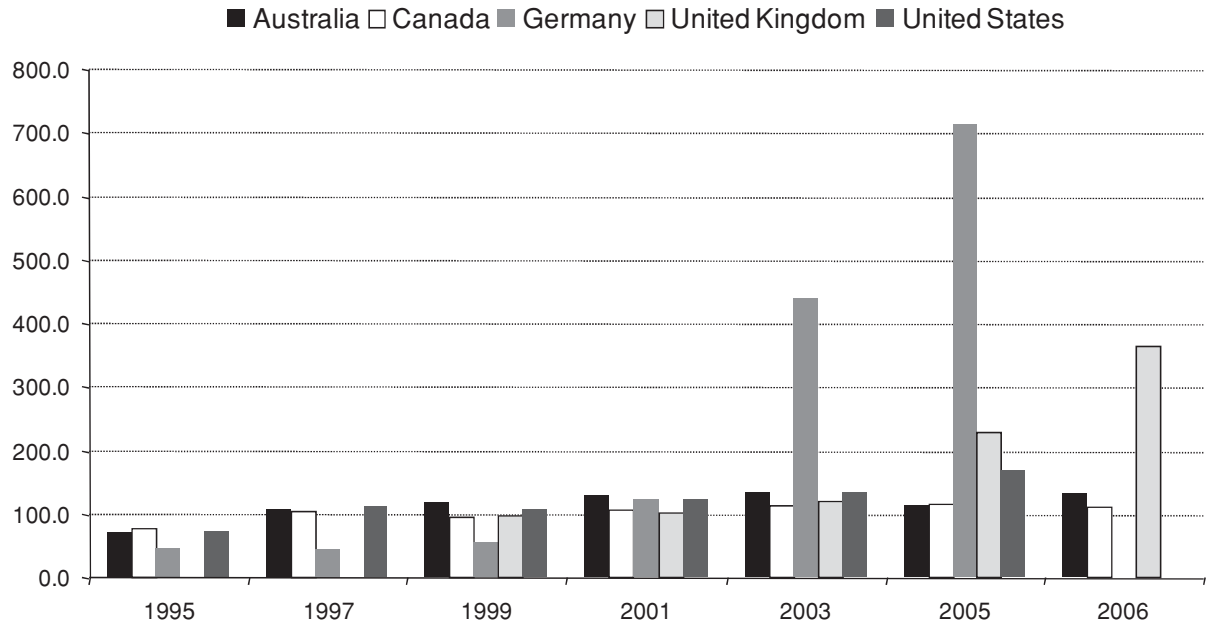
The main reason for this substitution is technological and results from computerisation. It is computerisation that makes possible the use of electronic means of payment. Computers' networking also facilitates the transfer of information that helps to create and update centralised databases on credit history easily accessible to lenders on which credit scoring can be made. The lenders' cost of credit monitoring and transaction approval has then been drastically reduced. From the consumer's side, credit cards act as a substitute to cash holding since the pre-authorised credit replaces the precautionary motive for money demand. Given these characteristics, it is then not surprising that, in today's world, there is a high demand for credit cards and that the substitution from instalment loans has occurred.

However, not all increased credit card use is due to substitution. In 2006, personal debt has reached 24% of disposable income in the US, much higher than at any previous time. As discussed previously, low interest rates explain partly why higher debt levels are now possible. Nevertheless, record levels are also observed in the UK, Australia and Canada, and personal insolvencies are also reaching unprecedented highs (see next section) as interest payments are taking a growing share of disposable income. The financing ability of credit cards facilitates unnecessary purchases and impulse spending (Rook, 1987) to the point that consumers using credit cards for payment accumulate more debt than debit cards users (Lee & all, 2007). Clearly, excess credit obtained when paying with credit cards result in excess debt burden.

1.5 *Indications of increased financial stress from insolvencies*

The increased burden of debt is showing in a growing number of personal insolvency cases. Figure 7 shows, with respect to an index value of 100 in 2000, how the number of personal insolvencies has changed over time. This does not allow identifying where insolvencies are more prevalent, but makes it possible to observe the trend in each country. Besides the recent explosion of cases in Germany (not in our comparison), we observe a very rapid rise in the UK, followed by a significant rise in the US. Canada and Australia also show an increase, but at a more modest pace. Although not indicated here, it is worthwhile to indicate that in Canada, the growth in the number of insolvencies has been particularly rapid among people over the age of 55.

Figure 7. Index on the number of personal insolvencies (2000=100)



Source: Presentation prepared by the Office of the Superintendent of Bankruptcy Canada for a conference at the *International Association of Insolvency Regulators*, Cape Town, South Africa, March 2007.

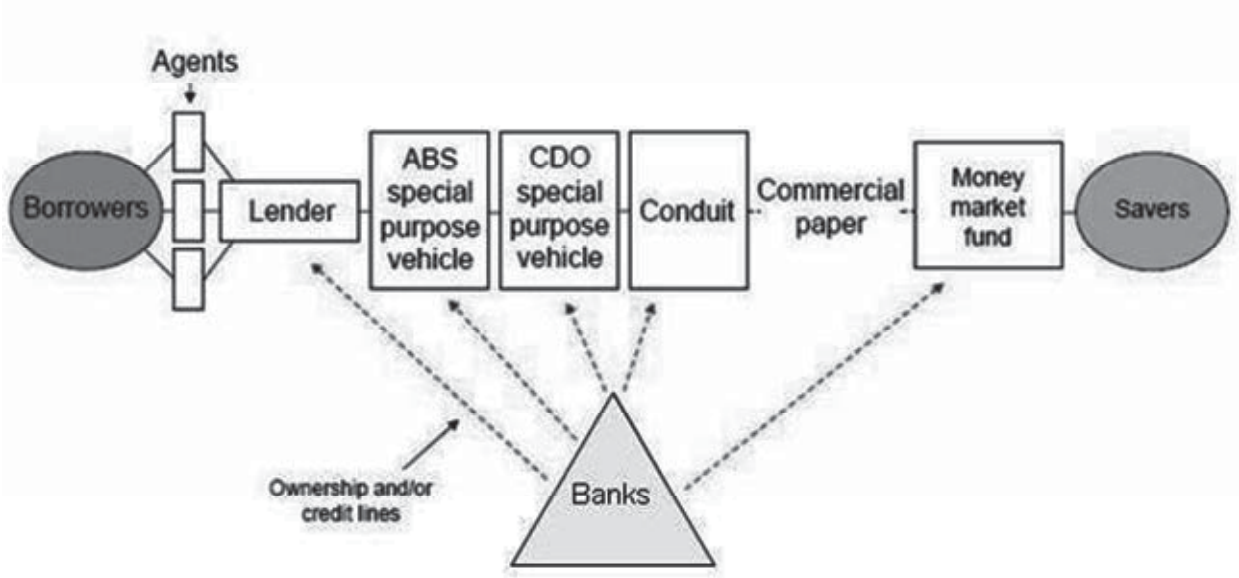
From our rapid survey of the preceding section, we now want to develop more on two selected recent areas of concerns worthy of further discussion, both of which related to the access to credit. In Section 2, we discuss the changing structure of the mortgage market and its implication for consumers who may have too easy an access to credit. Section 3 addresses the growing importance of alternative (or "fringe") credit products and its implication for some consumers that may have unduly restrictive access to credit.

2. Selected recent areas of concern: the mortgage market

2.1 The developing new structure of the mortgage market

Financial intermediaries have traditionally distributed directly their own financial products and funded their mortgages internally. The structure of the mortgage market has changed substantially. The following figure illustrating the interlinkages in the US subprime market, taken from a speech pronounced by the Governor of the Central Bank of Norway, shows the basic elements present in this new structure of the mortgage market.

Figure 8. Financing structure of the subprime market



Source: Gjedrem, 2007.

In this new structure, borrowers do not meet directly the lender but are rather in relation with an intermediary, a mortgage broker, which distributes the products of many lenders. The lenders securitise the loans and send the Asset-Backed Securities (ABS) to a Special Purpose Vehicle (SPV). Subsequent rounds of securitisation can be made, in which ABSs are one again packaged into collateralised debt obligations (CDO) that may also serve, further down the financing line, as collaterals to emit commercial paper which is sold to money market investors. Banks appear in parallel because they help in funding each step. What is missing in this structure is the rating agencies, whose role throughout the chain is to evaluate the risk of each asset, and mortgage insurers who guarantee the payments from the mortgage located at the beginning of the chain.

This financing chain presents three characteristics. First, it distributes the individual risks presented by each mortgage loan to an ever growing number of investors, in effect making the diversification of risks more efficient. Second, the level of risk effectively supported by each final saver becomes extremely difficult to evaluate, given the complexity in the distribution of funds. Third, maturity transformation allows money coming from short-term investors to be used for long-term mortgage financing. Since short-term investors usually require a lower rate of return, this maturity transformation reduces the expected cost of funding mortgages. However, by creating a maturity mismatch, the financing structure is exposed to interest rate risk. Indeed, if the interest rate level rises on the money market, that will put downward pressures on the market price of the CDO. In fact, the capacity to offer sufficiently attractive returns to final investors are reduced and the financing chain may dry up.

Here, two new significant problems, not present in the traditional mortgage distribution, have implications for consumer protection. First, given that lenders sell their mortgages, do they have the same incentive as before to scrupulously evaluate the credit risk of a mortgage? Second, the presence of mortgage brokers

acting as an intermediary between the borrower and the lender poses a principal-agent problem (agency problem) and their incentives have to be examined more closely. We discuss each of these issues in the following sections.

2.2 How securitisation increased risk taking by mortgage lenders

The development of securitisation has been welcomed by government officials who saw this as an opportunity to develop a new channel for mortgage financing, a positive element fostering a higher homeownership rate in the US.

"The recent rise in the homeownership rate to over 67 percent in the third quarter of this year (1999) owes, in part, to the healthy economic expansion with its robust job growth. But part of the gains have also come about because innovative lenders, like you, have created a far broader spectrum of mortgage products and have increased the efficiency of loan originations and underwriting. Ongoing progress in streamlining the loan application and origination process and in tailoring mortgages to individual homebuyers is needed to continue these gains in homeownership…Community banking epitomises the flexibility and resourcefulness required to adjust to, and exploit, demographic changes and technological breakthroughs, and to create new forms of mortgage finance that promote homeownership. As for the Federal Reserve, we are striving to assist you by providing a stable platform for business generally and for housing and mortgage activity."[12]

Since specialised lenders and mortgage companies securitised over 80% of their loans, they had an incentive to extend the type of loans desired by the secondary market. Given the strong demand until 2007 for high-yield assets such as CDOs, subprime mortgages have been considered as a privileged asset to provide the basic income sources in the creation of CDOs. "Hence, subprime lenders have had a strong incentive to underwrite high-yielding subprime mortgages, whether or not these loans were (in the) best interests of the borrowers"[13].

With securitisation, lenders transfer part of the risk to the ultimate savers. Given the high demand for ABSs, mortgage lenders were able to sell at a premium newly signed mortgages, thus generating an up-front capital gain rather than the constant flow of interest income as the mortgage is repaid. In other words, securitisation increases the incentives for closing loans that produce immediate gains, and diminishes the rewards to scrutinise the borrower's ability to entirely repay the loan.

2.2.1 Maintaining lending standards of securitised loans

Securitisation has recently taken a heavy blow. With the credit and financial markets' massive losses of the recent months, these complex financial assets have become much less popular and the funding from this channel has dried up considerably. The distribution of these complex financial assets requires a better supervision to ensure that risks are adequately priced throughout the entire financing chain. This element is important for investors, but also for borrowers to prevent that lenders make their profit up-front. Indeed, it is by adequate risk-adjusted pricing that the lender and the borrower share a common interest in a loan that the latter will be able to repay. If the pricing of risk is too low, lenders extend excessive amount to risky borrowers; at the

opposite, if the pricing is too high, risky borrowers may be unduly deprived of needed funds.

2.3 The growing presence of mortgage brokers and a trend toward a fee oriented market

2.3.1 Mortgage brokers presence and economic incentives

Mortgage brokers played a much more active role in distributing residential mortgages in recent years. According to a study made by Wholesale Access, they distributed 65% of all residential mortgages in the US in 2002[14]. Brokers are also very important in Australia, having distributed 38% of mortgage loans in 2007, a share that is down to 36% in the beginning of 2008, the first reduction since 2002. In Canada, brokers have a lower market share which stands at around 30%[15]. We have not found data on brokers' market share in the United Kingdom.

The growing presence of mortgage brokers poses new challenges for consumer protection because of the agency problem noted previously. First and foremost, although many borrowers may think that brokers have a fiduciary duty to act on their behalf, it is exceptional that laws regulating brokerage business impose this obligation to brokers. In the US, only a handful of states have, so far, imposed this duty (Colorado in 2007, Maine effective in January 2008, Minnesota, California). Yet, recent court decisions in the US tend to indicate that despite the fact that this duty is not explicitly specified in the law, mortgage brokers are tied to act in the borrower's best interests.

Given the absence of a fiduciary duty, do the brokers' economic incentives work in the best interests of borrowers? In fact, the yield-spread premiums (YSP)[16] paid by lenders to brokers create an incentive to do exactly the opposite.[17] Moreover, brokers may receive higher fees for mortgages with a prepayment penalty. The legal statutes of these incentives paid by lenders are controversial, since they are legal only if they are reasonable given the service provided. Consumers associations ask for an interdiction of these types of fees and a new bill on predatory lending is to be legislated in the US which proposes to force the disclosure of YSP. This proposition is contested by the National Association of Mortgage Brokers on the basis that banks do not have to disclose the actual YSP to customers, so that they would be placed at a disadvantage with respect to a direct distribution by traditional lenders[18].

Moreover, brokers fees are usually not related to subsequent loan repayment and they bear little or no risk when a borrower defaults[19]. Thus, they do not have the same incentive as traditional lenders to refuse high risk borrowers. In order to facilitate the loan approval process, brokers may choose to dissimulate or modify the information given to the borrower. For example, they may not disclose all the financial impact of the prepayment penalty. As to their relation with lenders, they may also modify the information regarding the work experience or the income of the applicant to ensure that the lender approves the loan. These practices have affected particularly the subprime market and are discussed more in length in section 2.5. But one point worth noticing is that brokers tend to be more present in the subprime mortgage market. Gramlish (2007) explains why in the following manner:

"While the prime mortgage market is well regulated and supervised, with the major lenders—banks and thrifts—undergoing arduous examinations every

three years, the subprime market is much less so. All mortgage markets operate under general federal statutes preventing discrimination, insuring proper disclosures, and regulating other aspects of mortgage transactions. But in the subprime market, 30 percent of the loans are made by subsidiaries of banks and thrifts, less tightly supervised than their parent company, and 50 percent are made by independent mortgage companies, state-chartered but not subject to much federal supervision at all. Mortgage brokers are largely unsupervised, with minimal incentives to see that borrowers get their best deal and only indirect incentives to see that borrowers will be able to make their mortgage payments. And many subprime borrowers are from lower-income households, not well-versed in financial matters, and vulnerable to losses in income or payment ability."[20]

2.3.2 Mortgage brokers' regulation

In Australia, brokers are regulated to some extent by the Consumer Credit Code, or its State equivalent, and are only subject to minimal disclosure laws. In the states of New South Wales, Victoria, the ACT and Western Australia where housing credit accounts for 73% of Australian total, state legislation applies specifically to mortgage brokers. Also, two professional associations, the Finance Brokers Association of Australia (FBAA) and the Mortgage Industry Association of Australasia (MIAA) require their members to comply to an internal code of conduct. A discussion paper, called National Finance Broking Regulation, is available since 2005 but a national legislation is still to be adopted.

In November 2007, The Office of Fair Trading of New South Wales deposed for public consultation the *National Finance Broking Scheme Consultation Package*, which is a proposed 'national' Bill for regulating mortgage brokerage in Australia.[21] At the heart of the proposed regulation is brokers' licensing. One important element of the proposal is that the broker "is responsible for ascertaining the consumer's credit needs and for determining whether the consumer has the capacity to repay a loan that satisfies those needs." The FBAA has recently (February 2008) deposed a brief to the Government Productivity Commission in which it welcomed the fact that the regulatory body would be the Australian Securities and Investments Commission. Although favourable to a common licensing regime for all Australia, they oppose to some aspects of the legislation because brokers would be "…cut out of the industry for many day to day finance products such as the refinancing of existing loans together with taking and submitting applications for Lo-doc and No-doc loans."They also oppose to a common licencing of mortgage brokers and financial advisors on the basis that these two professions need different qualifications[22].

In Canada, brokers' regulation is placed under the responsibility of provincial governments. Fiduciary duty is not imposed to brokers but they are in general submitted to the provisions of cost of credit disclosure included in the provincial consumer protection acts. One important aspect is that mortgage brokers must be licensed.

In the US, brokers are regulated trough many federal and state laws and subject to both the Real Estate Settlement Procedure Act (RESPA) and the Home Ownership and Equity Protection Act (HOEPA).[23] However, the complexity and diversity of the jurisdictions prevent from making a precise description of the general provisions regarding the brokerage industry. The President's Working Group on Financial Markets has very recently recommended a nationwide

licensing standards' for all loan originators, a position also defended by the National Association of Mortgage brokers. The working group also announced that the Federal Reserve would soon issue new rules mandating more disclosure about the nature of mortgage loans to add more clarity on the real costs of a loan throughout its life, such as when rates increase after a few years.[24]

2.3.3 Some recommendations and considerations related to mortgage brokers

Nationwide licensing of loan distributors.

In order to guarantee the competency and integrity of mortgage brokers, all loan distributors should be qualified professionals. This is the direction recently taken in Australia and the US, two countries in which more stringent regulation of the profession was needed. Note that the national brokers' associations in both countries respond positively to these proposals. However, they oppose to changes that would place them in a disadvantage with respect to banks' loan officers. For example, they oppose to have to make a mandatory disclosure of the yield-spread premiums (YSP) since the wholesale par rate is not disclosed by lenders.[25] This position is understandable as a study by Lacko and Pappalardo (2004) confirms that respondents working with prototypes forms that include YSP disclosure were substantially and significantly biased against brokers' loans proposals that have identical costs to those offered by direct lender.

Minimise the adverse consequences of the agency problem posed by mortgage brokers.

Brokers legislation, supervision and compliance should be conceived and implemented to increase brokers' incentives to work in the best interest of consumers. Many mechanisms are possible, such as prohibition of some kinds of fees, stricter supervision, fiduciary duties, etc. Each should be looked at closely to see how it would help to achieve this goal, without compromising the objective of maintaining an active role for brokers.

As an example of a question for discussion, let us consider the yield-spread premium. Although arguments are developed that it acts against the best interest of consumers, counter arguments can also be presented that YSP do not necessarily translate into higher mortgage cost. Indeed, a broker may increase the YSP not only trough a higher interest rate charged to the consumers but also by choosing a mortgage loan which has a lower par rate. There it then a possible shared interest with the borrower. Moreover, when the efficiency of a broker is known to lenders, they reduce the par rate to factor in the cost reduction made possible by a broker's higher efficiency and good reputation. Prohibiting YSP would then have as a side effect to reduce the brokers' incentives to be efficient and to look at the best par rate.

Other incentives can be designed to increase the incentives of brokers to properly regard the borrower's ability to repay. For example, fees could include payments, such as trailer fees, which are related not only to the closing of a mortgage deal, but also with the subsequent credit quality of the mortgage loan. Another possible mechanism consists to impose a fiduciary duty to brokers to act in the consumer's best interest. The feasibility and consequences of such a proposal shall be evaluated separately for each jurisdiction.

Strict rules or principles-based regulation?

Stricter rules can help in achieving the goals of better regulating mortgage brokers. As a substitute however, the United Kingdom's FSA has made public its wish to move to Principles-based regulation in brokerage. In a document destined to brokers the FSA describes this approach as:

- a move away from dictating through detailed, prescriptive rules and supervisory actions how to operate the business;
- giving the broker the responsibility to decide how best to run the business while also delivering the regulatory outcomes;
- greater reliance on principles and outcome-focused, high-level rules, and less reliance on prescriptive rules;
- a different approach to how the FSA deals with the brokers. The FSA will focus more clearly on the outcomes it wants to achieve, leaving more of the judgment calls to do with how the broker will achieve those outcomes;
- a continued need to rely on detailed rules and prescriptive processes in certain areas, to ensure adequate consumer protection or sufficient consistency between regulated firms. Also, when implementing EU legislation, the FSA might need to include more detailed rules.

As another topic worth considering, we recommend to explore what approach to regulation is best suited in achieving the goal of improving the protection and education of mortgage borrowers.

2.4 The efficiency of mortgage disclosure

2.4.1 Simplify cost disclosure for mortgage loans in the US

Closing a mortgage in the US is made more costly and opaque because US disclosure laws are numerous and often overlap on the mortgage market. Wellman (2003) observed that Canada is considerably less regulated than the US in the field of borrower protection. Yet, judging by his conclusion, Canadian regulation seems much more effective. Wellman, citing Pattison, wrote that "The US system is more a branch of law and study than a well-designed method of regulation"[26]. It would be worth exploring if these rules are in fact discouraging American consumers in negotiating by themselves their mortgage. If it where the case, that could explain the high demand for professional services, such as brokers, that may handle the complexity of the system. Too many rules exist to serve the interest of the consumers and a more coherent, simpler approach may be more efficient.

A recent report by the Federal Trade Commission[27] has looked at the actual mortgage origination process and, using a sample, compared it with prototypes of disclosure forms. The key findings of the study are: 1. Current mortgage cost disclosures failed to convey key mortgage costs to many consumers. 2. Prototype disclosures developed for the study significantly improved consumer recognition of mortgage costs, demonstrating that better disclosures are feasible. 3. Both prime and subprime borrowers failed to understand key loan terms when viewing the current disclosures, and both benefited from improved

disclosures. Improved disclosures provided the greatest benefit for more complex loans, where both prime and subprime borrowers had the most difficulty understanding loan terms.

In reaction to the mortgage crisis, an announcement has just been made by the US Department of Housing and Urban Development that, after a 60-day public comment period, a new form providing mortgage borrowers with an easier-to-understand information on mortgage terms will take into effect.[28] The proposed form will include a summary of loan terms, interest rate, monthly payment and whether the interest rate and principal balance will change, the presence of prepayment penalty, etc. This announcement, made while we were completing this report, goes into the direction of our recommendation and discussion topics.

2.5 The subprime crisis

2.5.1 The sources

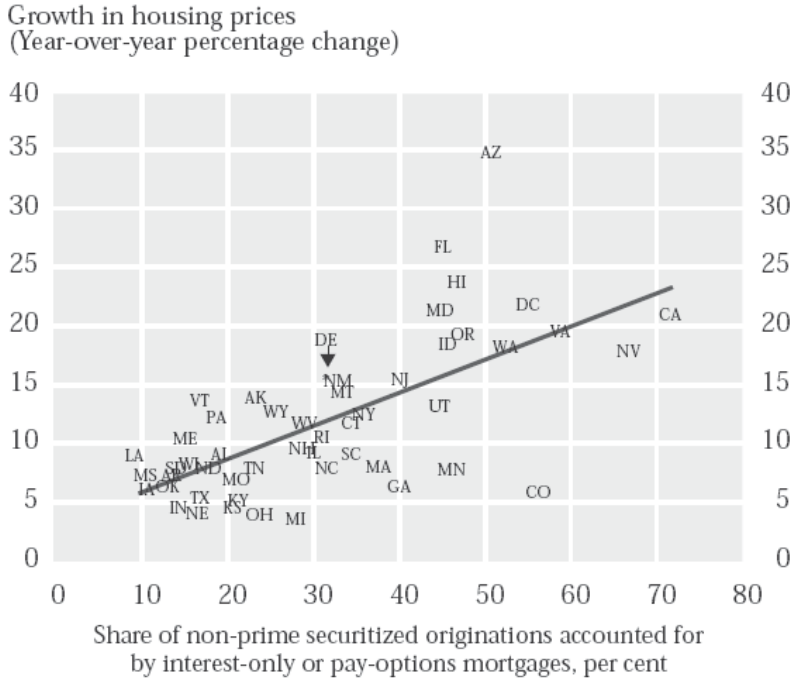
This section looks more closely into the sources of the subprime crisis. The *Guidance Supervision of Subprime Lending*[29], issued jointly in 2001 by the US Federal Reserve Board and the US federal banking regulatory agencies, defines subprime lending as "…programmes that target borrowers with weakened credit histories typically characterised by payment delinquencies, previous charge-offs, judgments, or bankruptcies. Such programmes may also target borrowers with questionable repayment capacity evidenced by low credit scores or high debt-burden ratios."

The Report of the Joint Economic Committee (subsequently JEC report) on the subprime crisis, published in 2007,[30] indicates that $190 billion of subprime loans were originated in 2001 (8.6% of all originations) and $625 billion in 2005 (20% of the total) and $600 billions in 2006. As to the proportion of subprime loans in the total number of mortgages outstanding, it rose from 2.6% in 2001 to 14.0% in 2007. During this five-year period, underwriting standards declined to satisfy the growing appetite for ABS.

Wellman (2003)[31] relates the growth of subprime lending to legislative, demographic, social, economic and political factors, some of them going back to the 80s. The first was the deregulation in 1980 of limitations on interest rate charge for loans secured by a residential property. This facilitated loan approvals to higher risk lenders by charging a higher interest rate. The second is securitisation, which we discussed earlier. The third is the general aging of the population which caused an expansion of the population with home equity growing faster than their income. The fourth factor is political and it originates from a goal of increasing homeownership rate, particularly in low income areas and among minorities. To achieve this, the Home Mortgage Disclosure Act was designed to combat discrimination in lending, by preventing for example the use of geographic factors in credit scoring. Also, the Community Reinvestment Act allowed to score lenders on the basis of how well they serve their communities. In 1994, the National Homeownership Strategy was adopted with a goal of increasing by 8 million the number of homeowners. In 2002, a new homeownership initiative was launched to further increase the proportion of minority homeowners.

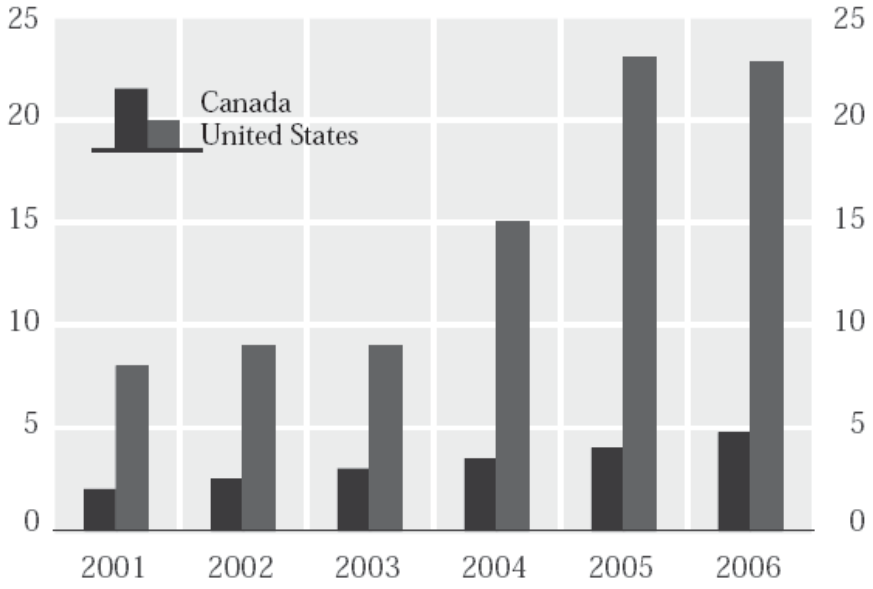
The JEC report relates the expansion of subprime loans to a well defined channel of financial intermediaries (borrowers, brokers, specialised mortgage lenders, securitisation, investors, as described in section 2.1) which had strong incentives to increase the supply of subprime loans. Indeed, in 2005 and 2006, over 80% of subprime loans were securitised. Subprime lending has not been uniformly distributed among all the states, being more prevalent in those states where home price inflation was higher (Figure 9). In Canada, subprime lending remained confined to at most 5% of the market (Figure 10).

Figure 9. Subprime share and house price inflation within states



Source: Bank of Canada, *Financial System Review*, June 2007, p. 7.

Figure 10. Subprime loans as a percentage of mortgage originations



Source: Bank of Canada, *Financial System Review*, June 2007, p. 6.

2.5.2 Predatory lending

The JEC report emphasizes: "However, since brokers and mortgage companies are only weakly regulated, another outcome was a marked increase in abusive and predatory lending." The JEC report illustrates the growing prevalence of weak underwriting standards and predatory lending practices in subprime mortgage loans with the indicators presented in Table 1. Looking only to 2006, we observe that the share of adjustable rate mortgage (ARM) loans was 91.3%, while 22.8% were interest only (IO) loans. ARM loans are not necessarily against the best interests of borrowers. Indeed, most mortgages in Canada and the UK are ARMs. However, the most prevalent type of ARMs in the subprime markets was the 2/28 hybrid loan in which the interest rate and the monthly payment are fixed during the initial two year period but the interest rate is periodically reset, with a margin, to an interest rate index for the remaining maturity of the loan. With this product the monthly payment is set to rise substantially after two years. It is estimated that the monthly payments on hybrid loans originated in 2006 will rise on average by 30% in 2008. Lenders that have underwritten this type of loan make it probable that, in fact, borrowers arriving to the third year will have to either refinance or to default. Given that the payment represented on average 42.4% of borrowers' income in 2006, it is not surprising that the number of foreclosures is rising rapidly as the hybrid ARMs contracted in 2005 and 2006 are arriving to their third year. To put the numbers below in perspective, a debt payment-to-income ratio of 30% or less and a loan-to-value ratio of 80% or less are considered to be conservative.

Table 1. Characteristics of subprime loans

	ARM Share	IO Share	Low-No-Doc Share	Debt Payments-to-Income Ratio	Average Loan-to-Value Ratio
2001	79,3%	0,0%	28,5%	39,7%	84,0%
2002	80,0%	2,3%	38,6%	40,1%	84,4%
2003	80,1%	8,6%	42,8%	40,5%	86,1%
2004	89,4%	27,2%	45,2%	41,2%	84,9%
2005	93,3%	37,8%	50,7%	41,8%	83,2%
2006	91,3%	22,8%	50,8%	42,4%	83,4%

Source: The Subprime Lending Crisis, op. cit., p.21.

The results above also point out to another common problem on the subprime markets, since as many as 50% of loans had no or low borrower documentation. In addition to showing how lenders were little preoccupied in cautiously monitoring loan applications, this was considered as an attempt by originators to evade laws preventing predatory lending.

Moreover, many loans commanded a high prepayment penalty, typically up to 5% of the initial loan amount. Given the likelihood that borrowers that have been qualified on the basis of the low initial two-year monthly payments will not be able to afford the payments thereafter, such lender practice has been qualified as an "equity stripping strategy".

It would be too long to enumerate all practices characterising predatory lending. Wellman (2003) cites 32 of them, classified under categories such as marketing, sales, loan characteristics and after closing charges. The most prevalent are listed below:

Box 1. Most prevalent predatory lending practices

- **Loan flippings:** Repeated financing of the same borrower by the same lender with high fees or prepayment penalties.
- **Excessive fees and packing:** Some brokers have charged up-front fees of 8 to 10% of the loan amount rolled into the mortgage loan, or have received excessive yield-spread premiums. Packing includes additional fees for related tasks such as document preparation, etc.
- **Fraud and abuse:** This involves a large collection of practices (misrepresentation of costs, changing key loan terms at closing, forged documents, etc.).
- **Single Premium Credit Insurance:** adding a lump sum for a life insurance which is added to the loan balance.
- Lending without proper regard to the borrower's ability to repay.
- **Mandatory arbitration:** These clauses commit the borrower to go for arbitration rather than litigation in case of disputes with the lender.

Source: Wellman (2003), op. cit, p. 8-9.

Predatory lending is prohibited but not without costs. The adverse consequences of predatory lending laws are worth examining below.

Box 2. Adverse consequences of predatory lending laws

- **Reduction of access to too highly regulated funding for marginal borrowers:** if high cost loans are prohibited or subject to additional monitoring costs (that is, disclosure, justification), some responsible lenders will pull out of this market.
- **Regulatory burden:** the cost of regulation imposed to lenders is transmitted to the borrowers through higher financial costs.
- **Possible impediments to providing the most cost-effective deal to borrowers:** for example, restrictions on prepayment penalties and balloon payments will result in higher interest rate charges. The resulting loan could be less adequate, given the income profile of the borrower.
- **Distortions in the market through unequal regulatory burden placed on different institutions:** the cost of regulation per dollar of assets is relatively higher for smaller lending institutions.
- **Frivolous lawsuits**: Numerous class action lawsuits have been launched in the US against the payment of yield-spread premiums, which can or cannot be in violation of RESPA (Real Estate Settlement Procedure Act) depending upon whether or not this payment is a reasonable compensation for services provided.

Source: Wellman (2003), op. cit., p 41-43.

2.5.3 Predatory borrowing

Although predatory lending has been placed at the centre of discussion on the subprime crisis, it is worthwhile to also present a conflicting point of view which was called "predatory borrowing" by Cowen (2008)[32] and described by him in the following way.

"There has been plenty of talk about "predatory lending," but "predatory borrowing" may have been the bigger problem. As much as 70 percent of recent early payment defaults had fraudulent misrepresentations on their original loan applications, according to one recent study."…" In some cases, borrowers who were asked to state their incomes just lied, sometimes reporting five times actual income; other borrowers falsified income documents by using computers. Too often, mortgage originators and middlemen looked the other way rather than slowing down the process or insisting on adequate documentation of income and assets. As long as housing prices kept rising, it didn't seem to matter."

The problem of "liar-loans" is not confined to the US. In the UK, the FSA revealed last year that more than 50% of sub-prime borrowers… "had "self-certified" their income, a process meant for the self-employed, even though the vast majority are salaried."[33] These fraudulent loan applications are often built with the help of websites providing fake certificates of employment or credit transactions.[34]

Why would someone lie if the mortgage loan is going to put him or her into bankruptcy in a few years? Surowiecki (2007) wrote: "Most (subprime lenders)

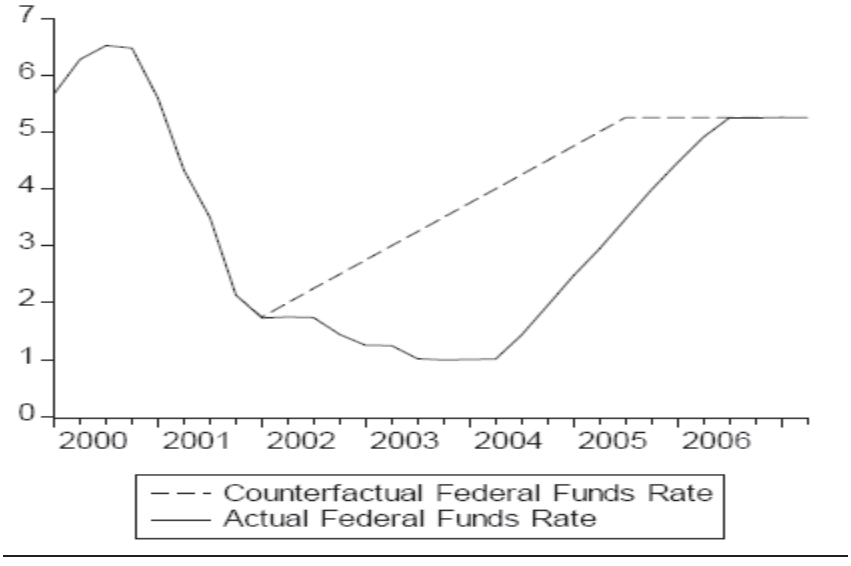
did not suddenly run into financial trouble; they were betting that they would be able to buy the house and quickly sell it. Similarly, last year almost forty percent of subprime borrowers were able to get "liar loans"—mortgages that borrowers can get simply by stating their income, which the lender does not verify. These loans were ideal for speculative gambles: you could buy far more house than your income justified, and, if you could flip it quickly, you could reap outsized profits."[35] Such a behaviour might explain the popularity of hybrid 2/28 loans as they provided a cheap source of funds for buying a house that people expected to resell with a profit before the ballooning in payment was going to go into effect.

2.5.4 *The contribution of monetary policy to the subprime crisis*

As shown previously, the subprime crisis is the result of a combination of events. The greed of lenders, brokers, Wall Street wizards and, to some extent, that of borrowers all played a role. But all this has been encouraged by a flow of easy money. Taylor (2007) points out the overly laxed monetary policy conducted by the Federal Reserve (thereafter the FED) between 2003 and 2005 as one of the reasons for the subprime crisis. He bases his argument on the Taylor's rule which he has developed to understand the dermination of interest rates by central bankers.

The Taylor's rule links the determination of the Federal funds rate by the FED to two variables, that is, on one hand the difference between the actual inflation rate and the FED's target inflation rate and, on the other hand, the gap between the actual and the potential GDP. Using this rule, Taylor states that US short-term interest rates have been kept too low during almost three years starting in 2002. Figure 11 below shows the actual and the counterfactual (based on the Taylor's rule) Federal funds rate.

Figure 11. Counterfactual interest rates



Source: Taylor, J., "Housing and Monetary Policy." Presented at the 2007 Jackson Hole Conference, Aug 2007.

Using this counterfactual interest rate, Taylor simulates the time path of housing starts and home prices that could have been observed. Obviously, higher interest rates would have kept housing inflation lower. Given the negative relationship between house price inflation and subprime mortgage lending, as illustrated in Figure 8, much of the excesses of the last five years could have been avoided if monetary policy had been less agressive.

2.5.5 *In summary - Is the subprime crisis a failure of consumer protection?*

Rules and regulation in credit have side effects. If they are too restrictive, they impose a burden that is transferred to credit users through higher credit costs or a reduction in credit availability. The balance between protection and restriction is not an easy one and the protective net must be adapted to the context. With a prudent creation of liquidity, protection and restriction were well balanced. But what happened, in our opinion, is that the tide of easy money flowing in the credit markets has placed too numerous temptations to maintain the effectiveness of the regulatory net protecting the American financial consumers. In other words, this protective net was torn apart by a luring combination of seemingly ever increasing housing prices, and too easy financing terms.

3. Selected recent areas of concern: The growing presence of alternative banking

In this section of the report, we examine the growing presence of alternative or “fringe” banking in four OECD countries: Australia, Canada, the UK and the US. For all those seeking credit users' protection and education, the growing presence of alternative banking in OECD countries' financial services industry is a major area of concern. In section 3.1, we provide definitions and characteristics of alternative banking, and we examine the nature of alternative banking operations. Section 3.2 provides a review of recent studies on the presence of alternative banking operations in some OECD member countries. Finally, in section 3.3 we discuss the challenges in regulating alternative banking.

3.1 The nature of alternative banking operations

Orton (2007) notes that to describe financial services and practices that are not part of the mainstream, the expressions fringe lending, fringe financial services, alternative banking, alternative financial services (AFS), predatory lenders, predatory lending, high-cost alternatives, unregulated practices, and predatory practices are commonly used. The literature also contains references to lenders who charge criminal interest rate(s). Some authors use the term financial phobia to describe people who shy away from anything to do with financial information – from bank statements to savings accounts to life assurance. According to Clementi (2004), it is reported that nine million people, over 15% of the total population, in the United Kingdom are financially phobic.

The literature shows that the un-banked, and the under-banked constitute a target market of vulnerable consumers for alternative financial institutions. The literature stresses the need for financial services for those people who must deal

with the challenges of low literacy or of being illiterate. Orton (2007) finds that the literature either states or suggests that the closer individuals are to being illiterate, the more likely it is that they will be un-banked, served by fringe financial institutions, and subject to unregulated or predatory practices, as illustrated in Table 2.

Table 2. Literacy and financial services

Literacy Level	High Literacy	Low literacy	Illiterate
Use of mainstream financial institutions	Banked	Under-banked	Un-banked
Served by	For-fee financial advisors Mainstream financial institutions	Fringe lending / financial services Alternative banking / financial services Predatory lenders / lending High Cost Alternatives	
Subject to		Unregulated and predatory practices	

Source: Orton (2007), p. 27.

There is an occasional acknowledgement that the alternative financial industry may be legitimate, and some observers have noted the advantages that the industry offers. Nevertheless, far more has been written from the assumption that alternative financial services are "predatory" and that their clients should be served by mainstream institutions. Orton (2007) believes that financial literacy is an issue at all income levels. Seniors, even those who have significant wealth per capita, may have particular difficulties within a changed financial services market. All wealthy consumers can be prey to "predatory financial advisors" motivated by the possibility of high fees and sales, just as low-income financial consumers need some protection from alternative financial institutions.

Related observations have been made in the OECD's (2005 b: 15) *Improving Financial Literacy*, which noted that, although financial understanding is correlated with education and income levels, "highly educated consumers with high incomes can be just as ignorant about financial issues as less educated, lower income consumers."

3.2 The presence of alternative banking operations in some OECD member countries

Documentation from the United Kingdom, the United States, Australia, Canada, and the OECD reference several factors that make financial education increasingly important: changing demographic profiles, growing complexity of financial products and services, decreasing personal savings accompanied by increasing personal indebtedness, and limited government resources. Even so, the consequences of poor financial decisions are becoming more serious. There is greater risk and fewer resources to cushion individuals and households from the impact of poor decisions. Some consumers are at risk from their own financial ignorance; at the same time, consumer debt is at an all-time high.

Surveys indicate that many consumers do not have an adequate financial background or understanding.

The OECD's *Improving Financial Literacy* concluded that financial understanding is low among consumers across OECD countries, especially among the less educated, minorities, and those at the lower end of the income distribution (OECD, 2005 b). Consequently, the growth in the number of alternative financial institutions is a special concern.

Despite all of this, there are not so many recent empirical studies that document the presence of alternative banking operations in Australia, Canada, the United Kingdom, the United States, and other OECD member countries.

Desmond and Sprenger (2007) found that a surprising number of people do not use banks, and that it can cost them. They say that estimates of United States households lacking a formal banking application with a federally insured depository institution run from 10 percent and 25 percent. Clementi (2004) also reported that nine million people in the United Kingdom are financially phobic. The people in these households, "the unbanked", resort to alternative financial-service providers, retail outlets such as groceries and convenience stores, and banks where they hold no account but make use of services such as check cashing and bill payment. The unbanked will benefit from having a "bank" account only if the costs of not having one are greater than the costs of having one. A better understanding of the direct and indirect costs is key to helping this population. The authors find that compared with people who have bank accounts, the underbanked have below average income and education, are younger, more likely to reside in urban areas, and disproportionately non-white. The unbanked invoke various reasons for being so: a dislike of banks, lack of proper identification for opening an account, the convenient hours of alternative financial services, and the privacy of keeping money at home. Nevertheless, people's primary justifications for remaining unbanked relate to their income and the perceived cost of bank accounts.

According to Desmond and Sprenger (2007), many individuals weigh the short-term direct costs of being banked (like monthly fees, minimum balance requirements, and possible overdraft charges) against the short-term direct costs of being unbanked and decide in favour of the latter. But are these individuals able to correctly identify and appreciate the full spectrum of costs? Taking into account all costs would mean the sum of more tangible short-term direct costs and less tangible longer-term indirect costs. Indirect costs are more difficult to estimate and to take into account, probably because their exact amounts are uncertain and that they will be incurred at various points in time in the future. The authors believe that the most important indirect costs of being unbanked relate to people being less able to save or build a credit history. Notice that formal saving is positively correlated with lifetime asset-building behaviour. Formal savers are more likely to own homes and cars, and also more likely to use formal sources of credit. Moreover, the unbanked forego the benefits that a bank account offers for building a credit history. Credit histories can legally be used not only for loan decisions but also for employment and housing decisions. Unbanked individuals frequently lack sufficient credit histories to satisfy the requirements of traditional lenders and are often obliged to resort to high-interest, informal loan products. These expensive loans, like "payday advance loans", can easily run out of control, and even exceed their initial value. As shown in Table 3 on some of the costs of being unbanked, giving

up the asset-building benefits associated with having a bank account can also mean incurring some of its indirect costs over time.

Table 3. Some of the direct and indirect costs of being unbanked

Costs accounted for	Monthly Cost	Yearly Cost
Money orders purchased for bill payment	$2.50	$30
Check cashing fees (one government, one or two payroll checks per month)	$14 - $27	$170 - $320
Payday advance loans	18% - 77%	213% - 913%

Source: Desmond, Sprenger (2007), pp. 25-26.

In Canada, the Financial Consumer Agency of Canada (2007) (FCAC) has recently published a 25-page study on the cost of payday loans. They also published and made available on the Internet a two-page financial consumer tip sheet entitled: *Understanding the Cost of a Payday Loan*.

A payday loan is an expensive, short-term loan that a financial consumer has to pay back from his next pay cheque. It is usually due within two weeks. A number of private companies offer this type of loan. For example, payday loans are offered by privately owned payday loan companies and by most cheque-cashing outlets. Payday lenders also operate on the Internet. It can also be difficult to detect and avoid low-security and/or fraudulent payday loan websites that exist only to gather and sell financial consumers' personal information. One can usually borrow up to 50% of his pay cheque (after taxes and other deductions). As shown next in Table 4, a payday loan is a very expensive way to borrow money. Payday loans cost much more than other types of loans. Payday loans are made more expensive by all the fees and charges that have to be paid on top of the interest. For example, extra charges, such as for late payment, can add up quickly and get consumers into financial difficulty.

Some financial consumers find advantages to obtaining payday loans: it is a fast way to get cash, it may be easier with a poor credit rating to get a payday loan than another type of credit, payday lenders are usually in easy-to-access locations, and they offer convenient hours of operation. Nevertheless, FCAC (2007) found the following disadvantages to payday loans: the financial consumer has to provide a lot of personal information to obtain a payday loan, a payday loan is very expensive compared to other types of short-term loans, many fees can add up quickly and the interest charged is much higher than that on other types of loans or credit cards. In addition, a payday loan will not improve a financial consumer's credit rating if his payments are made on time. However, if the loan is not repaid and it goes to collection, this could bring down the borrower's credit rating.

Table 4. Comparing the cost of a $300 payday loan, taken for 14 days with other types of short-term loans

	Payday loan	Cash advance on a credit card	Overdraft protection on a bank account	Borrowing from a line of credit
Interest	--------	$2.13	$2.42	$1.15
	+	+	+	+
Applicable fees	$50.00	$2.00	--------	--------
	=	=	=	=
Total cost of loan	$50.00	$4.13	$2.42	$1.15
Cost of the loan expressed as a % of the initial amount borrowed	435% per year	36% per year	21% per year	10% per year

Source: Financial Consumer Agency of Canada.[36]

In 2006, a national baseline study on consumers' financial awareness, attitudes and behaviour was carried out in Canada on behalf of FCAC. The findings of this survey indicated that of all adult Canadians:

- 96% reported holding a bank account. There was little or no difference between the various demographic groups. Extrapolated to population figures, it was estimated that nearly 1 million adult Canadians do not hold a bank account.
- 4% used a storefront cheque-cashing service to cash a cheque last year. Most likely were Northern residents (13%). Extrapolated to population figures, it was estimated that more than 1.5 million adult Canadians used a storefront cheque-cashing service last year.
- 2% used a storefront payday loan last year. Most likely were Northern residents (7%). Extrapolated to population figures, it was estimated that nearly half a million adult Canadians used a storefront payday loan service last year.

3.3 Challenges in regulating alternative banking

In this section we examine the available evidence on alternative banking in light of the OECD's (2005b) Improving Financial Literacy publication which formulated seven principles and 19 good practices.

Here, we apply these very principles in trying to provide answers to the challenges faced by specialised financial consumers' protection and education agencies. Some of these principles are:

- Governments and all other concerned stakeholders should promote unbiased, fair and coordinated financial education about alternative banking financial services;
- Financial education on the demand-side should start in primary school; high school level financial education programmes should offer a more in depth coverage of the pitfalls of alternative banking financial services;
- Financial education on the supply-side of alternative banking organisations should be made compulsory. Better governance of alternative banking services should encourage better accountability and increase social responsibility;
- Financial education should be clearly distinguished from commercial advertising and codes of conduct for the staff of alternative banking organisations should be developed;
- Alternative banking operations should provide potential and actual clients with specific and plain-language written information explaining financial consumers' rights and obligations when entering into commitments or financial services with potentially significant financial consequences;
- Demand-side financial education programmes should focus even more on life-planning aspects such as opening my first bank account, basic savings, and how to avoid incurring the high cost of some forms of consumer debt like payday loans or credit card unpaid balances;
- Financial education programmes targeted on low literacy or illiterate groups should be oriented towards basic financial capacity building and be personalised as much as possible;
- National media campaigns, specific Web sites, free information services and warning systems on high risk issues for financial consumers (such as fraud, alternative banking services) should be more actively promoted.

Notes

1 US homeowners can, in general, deduct form their taxable income the interest expense on a home mortgage. Such a provision, specific to the US and not applicable to other form of credits since 1986, creates an incentive to consolidate personal debts through a home mortgage.

2 Jaffee and Rosen (1979), p. 354.

3 Crook and.Hochguerte (2007).

4 Bridges S., R. Disney and J. Gathergood, 2006.

5 With a floating rate, changes in interest rates translate more rapidly into mortgage costs, thus increasing the sensitivity of housing demand to interest rates. As to the yield curve, if the short-term rate is below the long-term rate, a switch from long to short-term mortgages reduces credit cost and increase housing demand.

6 In 2001, 30-year and 15-year fixed terms comprised 90% of all mortgage loans while ARMs represented 10% of the total. In 2005, ARMs had grown to 40%, with half of them were interest-only, while fixed terms had shrunk to 60%. (Source: Newman & all, 2006) This switch is the likely consequence of the widening yield between long and short-term rates following the aggressive monetary policy implemented by the FED in 2003.

7 The Canada Mortgage and Housing Corporations (CMHC) is a federal corporation that, among other things, insures mortgage loans under the National Housing Act (NHA). NHA's MBS issuers must be either a chartered bank, a trust company, an insurance company, a credit union or a loan company. Mortgages pooled into the NHA's MBS are all guaranteed by the CMHC, thus having the same quality credit as that of the Government of Canada.

8 The share for the UK had to be calculated from the information provided by the Bank of England on quarterly net acquisitions of secured lending by specialist lenders.

9 Gross, D. B., and N. L. Souletes, 2002. A liquidity constraint appears when the desired level of consumption, subject solely to the expected lifetime flow of income, cannot be reached. In these situations, the borrower is willing to pay much more than the prevalent interest rate to access credit.

10 Brian K. Bucks, Arthur B. Kennickell, and Kevin B. Moore , 2006.

11 Kim H. and S. A. De Vaney, 2001.

12 Greenspan. A. Address to America's Community Bankers, November 2, 1999. Source: http://www.federalreserve.gov/boarddocs/speeches/1999/19991102.htm

13 *The Subprime Lending Crisis*, Report and recommendations by the majority staff of the Joint Economic Committee, October 2007, p.20.

14. Source: http://www.wholesaleaccess.com/images/MB04.outline.doc.

15 Source: *DBRS Comments on the Mortgage Markets in Canada and the United States*, September 6, 2007.

16 The yield spread premium (YSP) is an amount paid up-front by the lender to the broker when the interest rate on the mortgage loan exceeds the minimum rate, known as wholesale par rate, that the borrower qualifies for.

17 *The Subprime Lending Crisis*,op. cit., p.20.

18 See http://www.consumermortgagereports.com/national-association-of-mortgage-brokers-seeks-compromise-on-ysp/.

19 In Australia, brokers also receive trail commissions, that is, additional payments which increase with the life of the loan and stop if the loan defaults. Several banks are reviewing these practices to provide incentives to reduce churn and improve loan quality.

20 Gramlich, E. M., 2007.

21 Online: http://www.fairtrading.nsw.gov.au/pdfs/corporate/nationalfinancebrokingscheme.pdf

22 See http://www.pc.gov.au/inquiry/consumer/submissions/dr177_finance_brokers_association_of_australia/subdr177.pdf

23 It should be noted that US mortgage brokers are regulated by a number of federal and state laws, yet they are not subject to federal supervision to ensure that they comply with federal laws. Hence, any resources the states would devote to supervision would be minimal compared to those of the federal government. It is this lack of supervision that has in part contributed to the subprime mortgage crisis.

24 http://www.hemscott.com/news/latest-news/item.do?newsId=61518964427091

25 Lacko, J. M. and J. K Pappalardo, 2004. "The Effect of Mortgage Broker Compensation Disclosures on Consumers and Competition: A Controlled Experiment", Federal Trade Commission.

26 Wellman, T., op. cit., p. 64, 2003.

27 "Improving Consumer Mortgage Disclosures: An Empirical Assessment of Current and Prototype Disclosure Forms", Federal Trade Commission, Staff Report, June 2007.

28 "Real Estate Settlement Procedures Act (RESPA): "Proposed Rule To Simplify and Improve the Process of obtaining Mortgages and Reduce Consumer Settlement Costs", *Federal Register*, March 14, 2008. As this proposal was made public while our mandate was being completed, we did not have the time to analyze the document in great depth.

29 http://www.federalreserve.gov/boarddocs/press/boardacts/2001/20010131/attachment.pdf

30 We used two main references for this section. 1. *The Subprime Lending Crisis*, op. cit. We refer to this document by the JEC report.

31 Wellman, T., "Consumer Report and Protection in Mortgage and Home Equity Based Borrowing: The U.S. Experience and Canadian Comparisons", Canada Mortgage and Housing Corporation, External Research Program Research Report, October 2003.

32 "It's not just the lenders", *The New York Times*, Economic View, January 13, 2008. http://www.nytimes.com/2008/01/13/business/13view.html?_r=2&scp=1&sq=Tyler+Cowen&oref=login&oref=slogin

33 "FSA slams UK sub-prime mortgage market", *The Daily Telegraph*, July 4, 2007, http://www.telegraph.co.uk/money/main.jhtml?xml=/money/2007/07/04/bcnfsa104.xml

34 "The new home loan scam", The Times, July 14, 2007, http://business.timesonline.co.uk/tol/business/money/property_and_mortgages/article2071068.ece

35 "Subprime Homesick Blues", The New Yorker, April 9, 2007. http://www.newyorker.com/talk/2007/04/09/070409ta_talk_surowiecki

36 Financial Consumer Agency of Canada, http://fcac.gc.ca/eng/publications/PayDayLoans/CostOfPaydayLoans_TOC_e.asp

References

Bank of Canada, 2008, "*Monetary Policy Report: Update*," Ottawa, January, pp. 1-8.

Bank of Canada, 2007, "Development and Trends," *Financial System Review*, December, pp. 1-34.

Bank of Canada, 2007, "Development and Trends," *Financial System Review*, June, pp. 1-28.

Bernanke, Ben S., 2008, "The Economy and Financial Markets: Testimony before the Committee on Banking, Housing, and Urban Affairs, US Senate," Washington DC, February 14, pp. 1-2.

Bernanke, Ben S., 2008, "Semi annual Monetary Policy Report to the Congress," Committee on Financial Services, US House of Representatives, Washington DC, February 27, pp. 1-4.

Bridges, S. and R. Disney, 2001, "Modelling Consumer Credit and Default: The Research Agenda", Experian Center for Economic Modelling, University of Nothingham.

Bridges S., R., Disney and J. Gathergood, 2006, "Housing Collateral and Household Indebtedness: Is there a Household Financial Accelerator?" http://www.cide.info/conf/papers/b3.pdf

Bucks, Brian K., A. B. Kennickell, and K. B. Moore, 2006, "Recent Changes in U.S. Family Finances: Evidence from the 2001 and 2004 Survey of Consumer Finances *", Federal Reserve Bulletin*, vol. 92, February, pp. A1-A38.

Canada Deposit Insurance Corporation, 2008, "A*nnual Report* 2007," Ottawa, March, pp. 1-92.

Clark, Timothy, Dick, Astriel, Hirtle, Beverly, Stirok, Kevin J., and Williams, Robard, 2007," The Role of Detail Banking in the U.S. Banking Industry: Risk, Return, and Industry Structure," Federal Reserve Bank of New York, *Economic Policy Review* 13, no. 3, December, pp. 39-55.

Crook, J. and S.Hochguerte, 2007, "US and European Household Debt and Credit Constraints: Comparative Micro Evidence from the Last 15 Years", Tinbergen Institute Discussion Paper No. 2007-087/3.

Cunnigham, Rose, Kolet, Ilan, 2007, "Housing Market Cycles and Duration Dependence in the United States and Canada," *Financial System Review*, December, pp. 91-93.

Desjardins Economic Studies, 2008, "Economic Viewpoint: The probability of a recession is high, especially in the U.S.," January 15, pp. 1-3.

Desmond, Tyler, Sprenger, Charles, 2007, "Estimating the Cost of Being Unbanked," Federal Reserve Bank of Boston, *Communities and Banking*, Spring, pp. 24-26.

Dodge, David, 2007, "Turbulence in credit markets – causes, effects, and lessons to be learned," *BIS Review*, September 2007, pp. 1-6.

Dominion Bond Rating Service, 2007, "DBRS Comments on the Mortgage Markets in Canada and the United States," Structured Finance: RMBS, September 6, pp. 1-4.

Doms, Mark, Furlong, Frederick, and Krainer, John, 2007, "House Prices and Subprime Mortgage Delinquencies," *Federal Reserve Bank of San Francisco Economic Review*, no. 14, June 8, pp. 1-3.

Doms, Mark, Fernald, John, and Lopez, Jose A., 2007, "Financial Innovations and the Real Economy: Conference Summary," Federal Reserve Bank of San Francisco, *Economic Letter*, no. 5, March 2, pp. 1-3.

"Real Estate Settlement Procedures Act (RESPA): "Proposed Rule To Simplify and Improve the Process of obtaining Mortgages and Reduce Consumer Settlement Costs", *Federal Register*, March 14, 2008.

Federal Trade Commission, 2007, "Improving Consumer Mortgage Disclosures: An Empirical Assessment of Current and Prototype Disclosure Forms", Staff Report.

Financial Consumer Agency of Canada, 2008, "Know your Responsibilities as a Joint Borrower," Government of Canada, Ottawa, pp. 1-2.

Financial Consumer Agency of Canada, 2008, "Shopping Around for a Credit Card," Government of Canada, Ottawa, pp. 1-2.

Financial Consumer Agency of Canada, 2008, "Shopping Around for a Line of Credit," Government of Canada, Ottawa, pp. 1-2.

Financial Consumer Agency of Canada, 2008, "Shopping Around for a Mortgage," Government of Canada, Ottawa, pp. 1-2.

Financial Consumer Agency of Canada, 2008, "Shopping Around for a Pre-paid Card," Government of Canada, Ottawa, pp. 1-2.

Financial Consumer Agency of Canada, 2008, "Shopping Around for a Reverse Mortgage," Government of Canada, Ottawa, pp. 1-2.

Financial Consumer Agency of Canada, 2008, "The Cost of Payday Loans," Government of Canada, Ottawa, pp. 1-25.

Financial Consumer Agency of Canada, 2008, "Tips for Dealing with Collection Agencies," Government of Canada, Ottawa, pp. 1-2.

Financial Consumer Agency of Canada, 2008, "Tips for Dealing with Credit Counselling Agencies," Government of Canada, Ottawa, pp. 1-4.

Financial Consumer Agency of Canada, 2008, "Understanding the lost of a Payday Loan," Government of Canada, Ottawa, pp. 1-2.

Financial Consumer Agency of Canada, 2008, "Understanding your Credit Report and Credit Score," Government of Canada, Ottawa, pp. 1-17.

Financial Consumer Agency of Canada, 2007, "Annual Report 2006-2007," Ottawa, September 26, pp. 1-67.

Financial Consumer Agency of Canada, 2007, "Final Report: Stakeholder and Partner Research 2007," Ottawa, April 4, pp. 1-35.

Financial Consumer Agency of Canada, 2007, "Business Plan: April 2007-March 2009," Ottawa, March, pp. 1-73.

Financial Consumer Agency of Canada, 2007, "Final Summary Report: Evaluation of FCAC's Consumer Contact Centre," Les Études de Marché Créatec, Montreal, March, pp. 1-6.

Financial Consumer Agency of Canada, 2006, "Executive Summary: General Survey on Consumers' Financial Awareness, Attitudes and Behaviour," Ottawa, December 15, pp. 1-25.

Généreux, Francis, 2008, "United States," Desjardins Economic Studies, Economic News, February 25, p. 1.

Généreux, Francis, Vachon, Hendrix, 2008, "Is the U.S. in a recession? What are the signs?," Desjardins Economic Studies, Economic Viewpoint, February 14, pp. 1-8.

Gramlich, E. M., 2007, *Subprime Mortgages: America's Latest Boom and Bust*, Urban Institute Press 120 p. Ch. 1, Online: www.urban.org/books/SubprimeMortgages/chapter1.cfm

Greenspan. A. Address to America's Community Bankers, November 2, 1999.

Gjedrem, S, "Turbulence in credit markets - mortgage financing at home and abroad," Speech by Governor Svein Gjedrem at the annual meeting of the Norwegian Savings Banks Association, Hamar, October 11,2007.

Gross, D. B., and N. L. Souletes, 2002, "Do Liquidity Constraints and Interest Rates Matter for Consumer Behavior? Evidence from Credit Card Data", *The Quarterly Journal of Economics* 117(1), 149-185.

Kim H. and S. A. De Vaney, 2001, "The Determinants Of Outstanding Balances Among Credit Card Revolvers", *Financial Counseling and Planning* 12(1), 67-79.

Knight, Malcolm D., 2008, "Now you see it, now you don't: the nature of risk and the current financial turmoil", Ninth Annual Risk Management Convention and Exhibition of the Global Association of Risk Professionals, New York, February 26, 1-11.

International Monetary Fund, 2008, "Canada: Financial System Stability Assessment – Update," *IMF Country Report*, no. 08159, February, pp. 1-64.

International Monetary Fund, 2006, "Australia: Financial Sector Assessment Program – Technical Note – Investor Protection, Disclosure, and Financial Literacy," *IMF Country Report*, no. 061437, December, pp. 1-35.

Jaffee, D. M. and K. T. Rosen (1979), "Mortgage Credit Availability and Residential construction", *Brookings Papers on Economic Activity* 2, p. 354

Johnson, Christian, Kaufman, George G., 2007, "A bank by any other name," Federal Reserve Bank of Chicago, *Economic Perspectives*, Fourth quarter, pp. 37-49.

Lacko, J. M. and J. K Pappalardo, 2004. "The Effect of Mortgage Broker Compensation Disclosures on Consumers and Competition: A Controlled Experiment", Federal Trade Commission.

Lansing, Kevin, 2007, "Asset Price Bubbles," *Federal Reserve Bank of San Francisco Review*,

no. 32, October 26, pp. 1-3.

Lee, J., F. Abdul-Rahman and H. Kim, 2007,"Debit card usage: an examination of its impact on household debt", *Financial Services Review* 16, 73-87.

Lopez, Jose A., 2007, "Concentration in Commercial Real Estate Lending," Federal Reserve Bank of San Francisco, *Economic Letter,* no. 1, January 5, pp. 1-3.

Maki, D.. "The Growth of Consumer Credit and the Household Debt Service Burden", in *The Impact of Public Policy on Consumer Credit*, Durkin, T. A and M. E. Staten, Editors, Springer, 2001.

McDonald, Daniel J., Thorton, Daniel L., 2008, "A Primer on the Mortgage Market and Mortgage Finance," *Federal Reserve Bank of St. Louis Review* 90, no. 1, January/February, pp. 31-45.

Michkin, Frederic S., 2008, "Leveraged losses – lessons from the mortgage meltdown," US Monetary Forum, New York, February 29, pp.1-6.

Michkin, Frederic S., 2008, "The importance of economic education and financial literacy," Third National Summit on Economic and Financial Literacy, Washington DC, February 27, pp.1-3.

Michkin, Frederic S., 2008, "The Federal Reserve's tools for responding to financial disruptions," *BIS Review,* February 15, pp. 1-8.

Newman *et al.* (2006), "Mortgage Market Transformation and Foreclosure", Edward J. Bloustein School of Planning and Public Policy, Rutgers University.

Office of the Superintendent of Bankruptcy Canada, Presentation prepared for a conference at the *International Association of Insolvency Regulators*, Cape Town, South Africa, March 2007.

Office of the Superintendent of Financial Institutions Canada, 2007, "OSFI Annual Report 2006-2007," Ottawa, September 17, pp. 1-104.

Orton, Larry, 2007, "Financial Literacy: Lessons from International Experience," *Canadian Policy Research Networks*, September, pp. 1-54.

Rosen, Richard J., 2007, "The Role of Securitization in Mortgage Lending," F*ederal Reserve Bank of Chicago Letter,* no. 244, November, pp. 1-4.

Rook, D. W., 1987, "The buying impulse", *Journal of Consumer Research* 14, 189-199.

Sengupta, Rajdeeps, Aubuchon, Craig P., 2008, "The Microfinance Revolution: An Overview," *Federal Reserve Bank of St. Louis Review* 90, no. 1, January/February, pp. 9-30.

Taylor, J., "Housing and Monetary Policy." Presented at the 2007 Jackson Hole Conference, August 2007.

US Department of Housing and Urban Development, "Real Estate Settlement Procedures Act (RESPA): Proposed Rule To Simplify and Improve the Process of obtaining Mortgages and Reduce Consumer Settlement Costs", *Federal Register*, March 14, 2008.

Tsatsaronis, K. and H. Zhu (2004), "What drives housing price dynamics: cross-country evidence", *BIS Quarterly Review*, March 2004, 65-78.

Wellman, T., 2003. "Consumer Report and Protection in Mortgage and Home Equity Based Borrowing: The U.S. Experience and Canadian Comparisons",

Canada Mortgage and Housing Corporation, External Research Program Research Report.

Yellen, Janet L., 2008, "Prospects for the Economy in 2008," Federal Reserve Bank of San Francisco, *Economic Letter*, February 8, pp. 1-6.

Yellen, Janet L., 2007a, "Recent Financial Developments and the U.S. Economic Outlook," *Federal Reserve Bank of San Francisco Economic Letter*, September 14, pp. 1-5.

Yellen, Janet L., 2007b, "The U.S. Economy and Monetary Authority," Federal Reserve Bank of San Francisco, *Economic Letter*, December 7, pp. 1-6.

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