Proper Financial Planning - how it would have prevented Storm.

Summary

In late 1994 Geoff Davey and I started talking about what we called the firm component of financial planning. It might best be described as "what goes on in clients' heads in the decision making process". By 1996 we had settled on the measurement of an investor's financial risk tolerance as the focus of our work and two years later we made available to the Australian financial planning community a psychometric risk tolerance assessment tool.

Over the following three years, we got to understand that what we had developed was not just an assessment tool but also an auditable process which enabled clients to make informed decisions in relation to the financial risk they accept in taking up a financial plan and the products and services that it recommends.

What we learned subsequently from our discussions with planners and others involved in the industry in Australia, the UK and the US is that there are three different approaches to the asset allocation decision:

- The minority approach is planner driven. The planner assesses the client's needs and makes a recommendation having weighed up the issues. This is the preferred basis for advice for experienced financial planners and those that emulate them. We would call this 'professional judgement'.
- The second approach uses a 'portfolio picker' quiz to make a recommendation. These quizzes, typically 6 to 10 questions, are designed to tease out two important and usually competing criteria: the risk required to achieve the client's goals and their risk tolerance. As we will show later in this submission there is ample evidence that these risk quizzes are flawed from inception and are designed to pragmatically deliver a portfolio recommendation only. In so doing they conflate via a simplistic, hidden scoring algorithm, the key inputs that should be explored by the adviser with the client. The client must decide how much financial risk to accept in their life not the unknown designer of the quiz.
- The pragmatic approach used by many is to have clients take the quiz, usually because their compliance department demanded it of them, and then largely ignore the outcome because it is clearly nonsensical. Planners whether they are competent or not revert to the style of the first group and make a professional judgement.

The playing out of the professional judgement approach can be seen at its extreme in the Storm Financial catastrophe. The Storm principals, working within the regulatory framework that prevails, were able to exploit the fear of a poor retirement and put billions of dollars at extreme risk. They simply took no account of the clients' financial risk tolerance. They knew that best performance for clients comes from having at least all of their money exposed to Australian equities. And that is the advice they were given. Those clients that had a facility to borrow were advised to do so and invest those funds in the same asset class. While stock markets headed upwards there was little complaint but once the markets turned there were massive losses by thousands who could ill afford them. The ensuing pain and suffering for those investors, their families and their local communities has been enormous and will continue perhaps for generations.

Storm is not a surprise. Nor will it be the last. For more than 10 years we have been warning the industry and the regulators that there was a major problem about how advice was configured. Individuals and their families were at extreme risk. Few listened. It is flawed professional advice and/or the use of idiot quizzes offered by lazy super funds, indolent fund managers and apathetic financial advisers that cause the problems.

Today the assessment tool that Geoff Davey and I developed is being used extensively in the UK and the US. We have translated it into 5 languages and have users in 12 countries in total. The methodology to gain clients informed consent is recognised in the international standard of personal financial planning ISO 22222. Over 300,000 assessments have been completed.

The problem in Australia is that all too many in the industry pay lip service to the notion of being client centric. The primary obligation to take account of an individual's circumstances is found in the Corporations Act at Section 945A. The failure to rigorously police this objective is one of the main causes of poor financial planning that result in outcomes such as Storm.

There are many issues that will be covered in other submissions. This submission is primarily focused on one thing; the better matching of products and services to clients by better understanding their needs. In particular, this means assessing risk tolerance accurately and having a robust methodology to take it into account in the giving of financial advice.

Recommendations

1. That personal financial risk tolerance be taken into account in the construction of advice
2. That the financial risk tolerance assessment tool be scientific.

The risk tolerance story - a case study of failure to put the client's interests first

The story of risk profiling in Australia's financial planning industry is a good illustration of the "I know nothing" approach that puts customer's interests secondary. After 17 years of share and property market growth many Australian investors had a lesser notion of conservative investing than might have been expected given their risk tolerances and risk capacity. FinaMetrica's analysis of its Australian database suggests that often there is a significant difference in the riskiness of the asset allocation recommended and a client's risk tolerance. This has high relevance for those who are likely to have little ability to recover their losses. The only options are a significant lifestyle change such as returning to work, limiting spending or liquidating equity in other assets such as the family home. There will continue to be a wall of bitter criticism as the media explores the fact that Storm was allowed to run unhindered by regulatory pressure… many pre-retirees and pensioners were unprepared for the negative impact on their portfolio of recent market failures and consequent alterations to retirement plans.

For more than 10 years the FPA and ASIC turned a blind eye to the ticking time bomb. For them it was simply an issue that was too hard.

Over the last year or so I have spoken with a number of influential people in the financial services industry about the current state of both investment markets and financial planning. Most refused to acknowledge either the gravity of the situation or take any personal responsibility for it. They usually end our conversation by saying something like "I was simply doing my job" or "my first priority is to my shareholders". Typical comments when talking about doing risk profiling properly include: "it's not my responsibility; it's not in my job brief", "it takes too long to do risk profiling properly", "we simply couldn't suggest that there was a correct way to assess an individual's risk tolerance if along the way you might receive a commercial advantage" and "ASIC and the FPA are not unhappy with what we do". No one was prepared to take personal responsibility.

No one was prepared to say that what was going on was wrong. The agenda set by the regulators was all that the planning industry needed to achieve. That the standard was poorly articulated, wrong and inconsistent was never questioned. "We will do only that which is asked of us directly" was the prevailing approach by practitioners and those that supported them, dealer groups, their compliance managers and those responsible for education.

So what is the way forward? One good place to start is ISO 22222, the international standard for financial planning, which provides a robust and well thought through process to deliver client centric financial advice.

"Personal financial planning is a process designed to enable consumers to achieve their personal financial goals. The service of personal financial planning provided by a personal financial planner to assist clients with their personal financial planning." (from ISO 22222 – Personal Financial Planning). By starting from this definition, which asserts a consumer focus, it is possible to deal effectively with many difficult financial planning issues, particularly misunderstandings concerning risk and ultimately client accountability for their financial plan.

Consumers do some form of personal financial planning all the time- when they open and use a bank account, purchase and pay insurances, choose and stay in a job, contribute to a retirement account, etc. In most cases their underlying objective is to make the most of their opportunities without putting their financial wellbeing at risk. In the person's mind, there is usually no formal starting point such as a written plan.

However at some point in time, an individual may recognise the need for assistance and seek the help of a professional to help crystallise and document what they should do. If the person (now a client) 'owns' the ongoing journey and the adviser 'merely' provides a service, then client ownership of the plan and any product recommended flows naturally.

Client accountability can be simply understood and managed from this perspective. Provided it can be demonstrated that they act to ensure clients are able to make informed decisions, then clients share some responsibility for the outcome of those decisions

The client is only responsible to the extent that the adviser has:

- properly informed the client about strategic alternatives and allowed the client to make a free choice between alternatives,
- recommended/selected only products/services that are fit for the alternative's purpose, and
- properly implemented the recommendation/selection.

The key issue is that the adviser must provide sufficient information in a format that the client can appreciate so that 'properly informed' decisions can be made. This has important implications for client satisfaction, liability management and settlement of disputes.

A meaningful financial plan, as is the case in many other structured activities, needs a firm foundation. We know that the client's goals and aspirations are likely to vary over time. Similarly, we understand that the client's personal circumstances - employment, health and dependency relationships - are also prone to change. So are their financial circumstances - the value of their assets and their liabilities, their income and expenses. And of course there will be other issues that alter in their life. However, one thing that we can say rarely varies significantly over a three to five year period is their individual financial risk tolerance. Consequently their financial plan is likely to be refined several times before we see any change in risk tolerance. The client's agreement with their financial risk tolerance assessment can be the bedrock of an individual's financial plan. In the potential maelstrom that is the client's life it is possible to plan and navigate their future using behaviour based on their risk tolerance as the benchmark for decisions.

This is the story of financial risk tolerance where we:

- explore risk tolerance as a psychological trait and outline how to assess it using psychometrics.
- clarify and define the other three aspects of risk; risk required, risk perceived and risk capacity that need to be taken into account in the giving of investment advice.
- illustrate, via case study, the risk trade off decisions that an individual needs to make prior to deciding how much risk to accept in their investment strategy.
- review the overwhelming evidence before and after the Global Financial Crisis for the enduring nature of an individual's financial risk tolerance [Appendix A].

The underlying thesis is that investor's future behaviour can be best leveraged through the prism of their financial risk tolerance.

QUESTIONING RISK QUESTIONNAIRES

Most advisers today use some form of 'risk questionnaire'. It may be one provided in their planning software, by a product supplier or as a required element from a compliance department. Typically, the client completes it quickly, often with the adviser's 'assistance'. Then one of two things occur: either the adviser moves on to the 'real' portfolio design process or, even worse, the risk questionnaire itself is used to select an investment portfolio directly. This last type of profiling is known as a portfolio picker strategy. Questions are asked about goals, experience, risk capacity, risk tolerance, etc., to select one of five or six investor 'styles' e.g. "A Prudent investor who values security of capital …", each of which has its own model portfolio/asset allocation. This reduces the whole planning process to an intellectually empty and ethically indefensible quiz!

Normally the designer of a portfolio picker starts with the model portfolios/asset allocations and works backwards to a questionnaire and scoring algorithm – a very arbitrary process.

A recent empirical study of 131[1] such questionnaires showed alarming results. When all questions in the questionnaires were answered in the most conservative way, the percentage of assets recommended for stocks ranged from 0 to 70. When answered in the most risky way, the percentage of assets recommended for stocks ranged from 50 to 100.

One consequence of the industry's reliance on portfolio pickers is that many advisers have a poor understanding of their clients' risk tolerance. Statistical studies typically show correlations of .4 or less between advisers' estimates and measured risk tolerances. Correlations of this order give errors of two or more standard deviations for one in six cases. This means that advisers would be more accurate if they made no attempt to assess clients' risk tolerance and simply assumed all clients were average![2]

Putting these inaccuracies another way, when risk tolerance scores are converted to an indicative growth and defensive asset split the difference could be 30% or more.

These unsatisfactory results can be attributed to two main causes.

- The selection of an appropriate model portfolio/asset allocation will be a function of a number of variables – goals, resources, time frame, risk capacity, risk tolerance and so on. Usually there will be some conflict between these goals; for example, the client cannot realize all their goals from the resources available, in the desired time frame within their risk tolerance or risk capacity. In a portfolio picker these conflicts are 'solved' through 'averaging' by the scoring algorithm, which reflects the test designer's values not the client's. Critical trade-off decisions are made completely unseen by adviser or client.

- There is no rigour to the process by which questions are selected and scored. Whether the questions actually measure what they purport to measure is anyone's guess. Woe betide an adviser having to defend advice based on these questions.

While it might be convenient to arrive at a model portfolio/asset allocation in a single step, it is the very opposite of professionalism and a complete negation of the adviser's duty of care to the client.

The better option is to rigorously measure the critical variables separately, and then incorporate these measurements into the planning process in a manner that allows trade-off decisions to be made out in the open, visible to both client and adviser.

Which brings us to risk tolerance itself and how it should be assessed.

RISK TOLERANCE AND HOW TO ASSESS IT

Risk tolerance is psychological. It expresses how an individual feels emotionally about taking risk. Where does the person strike the balance between getting a favourable outcome versus an unfavourable outcome?

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[1] A PhD dissertation, Variance in Risk Tolerance Measurement – Towards a Uniform Solution, Douglas F Rice, Golden Gate University (Unpublished).

[2] See

- Survey of Financial Risk Tolerance –Australian Technical Report, Elsayed, H & Martin,J (Unpublished) www.riskprofiling.com/Downloads/SOFRT_Report.pdf.
- Gender Stereotypes in Advisers' Clinical Judgments of Financial Risk Tolerance: Objects in the Mirror Are Closer than They Appear , Roszkowski, M.J and Grable, J., Journal of Behavioural Finance, Volume 6, Issue 4, February 2005 , pages 181 - 191.
- Estimating Risk Tolerance: The Degree of Accuracy and the Paramorphic Representations of the Estimate, Roszkowski M.J. and Grable J., Association for Financial Counseling and Planning Education (2005) **www.riskprofiling.com/Downloads/EstimatingRiskTolerance.pdf .**

For example, have you ever been a passenger in a car when the driver seems to be going either too fast or too slow? The speed obviously feels right to the driver, but you're uncomfortable. Either you're anxious that there will be an accident, or you're antsy, wondering why he or she is just creeping along. (Now if the creeping driver is your sixteen-year-old son, all of a sudden the speed seems just fine…but that's another story altogether.) Many factors determine a person's driving behaviour, but a key element is the person's tolerance for risk. The fast driver has a higher risk tolerance than you, the worried passenger - and the slow driver's risk tolerance is lower than yours.

There are four types of risk tolerance: physical, social, ethical and financial. Individuals behave consistently within type but not across types, i.e. a mountain climber is more likely to be a hang-glider than the man or woman in the street, but may or may not be a financial risk taker. Until recently, the existence of the four types was not known in the financial services industry and financial risk tolerance questionnaires often included questions about other types of risk. (Hereafter "risk tolerance" should be read as "financial risk tolerance".) Factor analysis reveals a single significant factor which means that there aren't multiple types of risk tolerance, e.g. investment risk tolerance, insurance risk tolerance, borrowing risk tolerance, etc. but one single type that applies across all financial dimensions.

An individual's risk tolerance influences that individual's risk-taking behaviour. An individual is exposed to risk in any situation where there is more than one possible outcome. The ISO 22222 Personal Financial Planning Standard defines risk tolerance as "the extent to which a consumer is willing to risk experiencing a less favourable financial outcome in the pursuit of a more favourable financial outcome."

Psychologists have been concerned with risk tolerance for more than 50 years. A large body of knowledge based on studies that have been independently refereed and replicated has been accumulated-see Risk Tolerance Research box. Unfortunately, very little of this knowledge has made its way into the financial services industry until recently. Generally, when financial services businesses seek academic/researcher input it is almost invariably from finance and economics. The silos in academia are such that the psychologists' knowledge has largely stayed with them.

Risk tolerance is a most challenging variable to measure. Fortunately there is a scientific discipline, psychometrics, for testing attributes such as risk tolerance[3]. Psychometrics, a blend of psychology and statistics, provides a discipline for developing a valid and reliable test and standards against which the bona fides of a test can be evaluated. In psychometric terms, a valid test is one that measures what it purports to measure and a reliable test measures consistently with known accuracy.

Psychometric tests will confine their questions to risk tolerance. Questions will have been selected after a rigorous process of usability and norming trials. In usability trials questions are tested for understandability (how easy the question is to understand) and answerability (how easy the question is to answer). Usability trials ensure that questions are in plain language and can be understood without explanation by the adviser. Only those with high usability are retained for the norming trials which test the statistical qualities of each question and of the scoring algorithm.

A psychometric risk tolerance test will provide an accurate assessment of a client's risk tolerance - with a small known margin of error on a known scale – and a plain language report that will be meaningful to both client and adviser. A psychometric test does not replace discussion with the client but rather provides an objective input to that discussion.

Interestingly, a psychometric test mirrors what many advisers aim to do, either intuitively or by using non-scientifically derived questionnaires, namely,

- Form a view as to the client's risk tolerance, by conducting a question-and-answer discussion about the client's attitudes, values, preferences and experiences in matters involving financial risk.
- Rate the client on some type of low/medium/high scale, usually in comparison with the adviser's other clients.

[3] **Insights on Measuring Risk Tolerance from Psychology and Psychometrics**, Roszkowski, M.J, Davey G. and Grable, J., Journal of Financial Planning, April 2005.

- Feed back to the client a written summary of this view which shows how they are similar and different from others.
- If required after discussion with the client, amend the summary to reflect the client's feedback in order to obtain the client's confirmation that the adviser's understanding is accurate and that the adviser may rely on it.

But is does so with scientific rigour.

Psychometric testing is complicated. But the complexity resides in the development of the questionnaire and the report, not in its use with clients.

FOUR PRIMARY ASPECTS OF RISK TO BE TAKEN INTO ACCOUNT IN GIVING ADVICE

Understanding and managing the four primary aspects of risk will help in the delivery of better advice and the building of stronger relationships with clients.

Advisers talk to clients all the time about risk issues, and compliance departments dedicate an enormous percentage of their time on the risk-related aspects of advice. But even with all the ostensible focus on risk, many advisers do not handle it well. It may be because they themselves are not clear.

Risk has four primary aspects:

- Risk required - the risk associated with the return required to achieve the client's goals, a financial projection.
- Risk perceived – the risk perceived by the client in the course of action being considered, how risky the action feels to the client.
- Risk capacity – the risk that the client can afford to take, a financial characteristic.
- Risk tolerance – the risk normally chosen by the client, a personality characteristic as described above.

We have already examined risk tolerance; let's now look at the other three.

RISK REQUIRED

How can risk be required? Well, it's not actually a risk that's required but rather a return that's required. Taking a client's circumstances, resources and goals as inputs, advisers can use planning software to determine the return required to achieve goals … and there will be a level of risk associated with that return, hence a risk required. Of course, the first time the inputs are fed through the software the return required might be impossibly high, e.g. inflation plus 20%, in which case some reality checking and goal reviews will be needed to bring the return required down to a level that is at least feasible.

RISK PERCEPTION

Let's take a look at an example of risk perception. Several older colleagues have bought motor scooters for short trips. They don't see this as carrying a risk, yet statistics show that people over 50 who ride a motor scooter are more likely to have an accident than younger folk. But most of the older people who buy them are not aware of the statistics, so their perception is of a much lower risk.

Some of the people who bought sub-prime investments—the ones with AAA ratings— didn't realize they were taking a risk. We now know that the ratings of those investments may have been problematic, but the investors saw and put their faith in the AAA rating, they bought the investment and didn't perceive the risk as being as high as it was.

In the current climate, clients may see more risk in investment markets than prior to the Global Financial Crisis – clearly an opportunity for re-education.

Clients cannot give their informed consent to any strategy where the risks are not clear. Advisers must ensure that clients' risk perceptions are soundly based and that the (downside) risk has been explained in terms the client understands, and be able to prove this subsequently, should proof be necessary.

RISK CAPACITY

Risk capacity has to do with whether, for a given level of risk, the individual's financial situation can withstand the impact of a worst case outcome.

Imagine that your mother decides she'd really like to learn to ride a skateboard, so she goes out and buys one. You try to talk her out of it, because while she may have the appropriate risk tolerance for it – after all, she was the one who decided to try it – she doesn't have the appropriate risk capacity because she could easily break a hip or something equally incapacitating. So you give the skateboard to your 8-year-old son and suggest that he use it. He doesn't want to try it because he knows that his friends have had accidents and he doesn't want to get hurt. This is just the opposite situation. He has the risk capacity – he's not likely to break anything and even if he does, he'll recover quite easily. But he obviously doesn't have the tolerance, the psychological inclination, for this type of risk.

A client's risk required may be achievable through a portfolio that could fall by 30% and such a fall may be consistent with her risk tolerance, so far so good; but an evaluation of her risk capacity shows she can lose no more than 10% without putting her important goals at risk. Risk capacity is an absolute measure and overrides the other two. Resolving such a mismatch is discussed under Trade Off Decisions below.
Advisers are readily able to evaluate risk capacity by analysing the client's financial circumstances using financial planning software.

The four aspects – risk tolerance, risk capacity, risk perception and risk required – all come into play when advisers sit down with clients to do financial planning and all are important. However, what is absolutely essential in the risk conversation with clients is that advisers (1) recognize how these aspects are distinct and (2) ensure that there is no confusion between them when it comes to the client's decision-making.

TRADE-OFF DECISIONS

The process of personal financial planning invariably involves helping our client manage one or more conflicting alternatives through trade-off decisions that best meet their present and future wants and needs in their current and anticipated circumstances.

This is echoed in ISO 22222 – Personal Financial Planning. "The personal financial planner shall produce and provide to the client, in a clear and reasonable manner, an evaluation of the client's status that identifies areas of strengths and vulnerability, comparing them against the client's goals, plans, restrictions and assessment of financial risk tolerance." Later in the Standard at Developing and Presenting the Financial Plan it says "Personal financial planners shall be able to compare the client's tolerance for financial risks and the financial risks that may be involved in achieving his or her goals and assist the client in resolving any differences."

Effective trade-off decisions can only be made when the elements of the trade-off have been separated, and can be clearly understood and compared.

A simple example illustrates a typical financial planning trade-off situation. In deciding on what portfolio best suits his needs and to which he can make a properly informed commitment, Bob, with his adviser's assistance, needs to take into account and resolve conflicts between competing risk-related parameters.
Bob's adviser shows him that he needs a very aggressive portfolio to achieve his life ambitions (risk required). However, by questioning and analysis she discovers that Bob could afford to lose no more than 10% of his investment assets without having his life ambitions markedly changed (risk capacity), which means a conservative portfolio. By assessment, the adviser discovers that Bob has a low-ish risk tolerance which, all else being equal, would lead him to a portfolio that in Australia might have 40% growth assets such as property and shares. Clearly there are three different asset allocations leading to three distinctly different lifestyle outcomes competing here, but:

- Is any one of them right for Bob?

- Which allocation causes Bob the greatest and the least anxiety?
- Are there any other alternatives to explore?
- What is the right way to proceed, recognizing the substantial differences in long-term outcomes?
- How should Bob make those decisions?

In the end, Bob must make the decisions because he is ultimately the one who has to live with the consequences. He must give his properly informed commitment to the asset allocation that will be implemented. Exploring the trade-offs is usually a powerful educational experience about risk and return, where misconceptions about risk can be corrected. The adviser's role in this process is to suggest alternatives, illustrate outcomes, recommend – but not decide. As the ISO Standard puts it "Personal financial planners shall be able to integrate the various financial plan components, explain the resulting comprehensive plan and obtain the properly informed commitment of the client to proceed."

This process is commonly called Gap Analysis and is usually resolved by clients through a combination of:

- Increasing the resources being applied through earning more and/or spending less.
- Converting personal use assets to investment assets.
- Easing the goals through delaying, reducing and/or discarding.
- Taking somewhat more risk than would be their preference (but not to the stage that in a downturn they might panic and sell.)

Contrast this interactive and personal process with the portfolio picker's arbitrary one-step 'solution' described above.

DEALING WITH COMMERCIAL REALITY

Failure to deal with risk issues in a professional and effective manner can have serious consequences in both bad advice and legal claims for inappropriate advice.

Sloppy risk processes make advisers vulnerable to claims by unhappy clients. It can be all too easy for a client who has lost money to say,

"The strategy was too risky for me. My adviser should have understood that. What's more I didn't understand the risks because they weren't explained properly. If they had been I would not have proceeded."

In such circumstances it can be very difficult to prove informed consent.

SUMMARY

In the course of this submission we made two recommendations:

1. That personal financial risk tolerance be taken into account in the construction of advice
2. That the financial risk tolerance assessment tool be scientific.

We also:

- argued that Storm fiascos were always going to happen with the way the "know your client" obligations were dealt with within the industry.
- submitted that an informed consent methodology would result in a better matching of products and services to clients' needs.
- argued that traditional risk profilers are flawed and dangerous. They fail to encourage client ownership to one of the most critical parts of their financial plan - the level of financial risk they take on in their investments.
- explored risk tolerance as a psychological trait and outlined how to assess it using psychometrics.

- clarified and defined the other three aspects of risk that need to be taken into account in the giving of investment advice.
- illustrated, via case study and by reference to ISO 22222 the risk trade-off decisions that an individual needs to make.
- reviewed the evidence for the enduring nature of an individual's financial risk tolerance [Appendix A].

Clients who understand, or have been participants in the Global Financial Crisis are unlikely to need to be persuaded that risk is an important issue. The better advisers can demonstrate that the four aspects of risk are being dealt with appropriately, the stronger the ongoing client relationships will be.

Clients live out both the good and bad consequences of their investment decisions. Building the decision process from the foundation of their enduring financial risk tolerance ensures that they can make informed commitment to the risk taken on. We never needed to have a Storm. We do not need to have another.

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July 2009

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RISK TOLERANCE RESEARCH

Much is now known about risk tolerance from both general studies and studies involving FinaMetrica data and Intellectual Property. In addition to studies cited in the main text, a selection of studies are cited below. Discoveries made by psychologists and others over the past 50 years include:

- Risk tolerance is normally distributed so that the standard statistical formulae and techniques can be applied to risk tolerance observations.
- Demographic analysis indicated:
  - Males are more risk tolerant than females.
  - Risk tolerance decreases with age.
  - Risk tolerance correlates positively with income wealth and education, and negatively with marriage and number of dependants.

  However, the studies tended to involve small, homogenous samples, the correlations weren't strong and some researchers came up with different results.
- A journal paper[a] on how financial advisers should assess clients' risk tolerance and advise clients about risk tolerance.
- A study[b] of the effects of (financial) education on pension fund members showed no change in risk tolerance. This is an important study because it casts serious doubt on the common belief that, if a client's risk tolerance is 'too low', it can be 'fixed' or 'improved' by adviser education.

FinaMetrica has always had a policy of supporting educators and researchers through providing free use of our risk profiling tool, our other IP, our expertise and our database (now approaching 300,000 risk profiles completed since the business was founded in 1997). This policy has resulted in five PhD dissertations, four Masters theses and numerous professional journal articles.

Discoveries/studies made using the FinaMetrica tool and/or data include:

- Financial advisers are more risk tolerant than their clients by slightly less than a standard deviation.
- A major demographic study[c] of the risk tolerances of a large, diverse sample found:
  - A confirmation of the gender (males more than females) and aging (decreases with age) correlations, with the aging correlation exhibiting a significant nonlinear structure.
  - Negative correlations with marriage and the number of dependents.
  - Positive correlations with income and assets.
  - While respondents' self-assessed risk tolerance and risk tolerance test results generally accorded, there is considerable variation with a tendency for respondents to under-estimate.
- A by-country differences study[d] that found there were statistically significant differences between countries but so small as to have no practical impact.
- A study[e] linking the psychological construct risk tolerance with the financial construct risk aversion, which found that psychological risk tolerance predicted, inversely, financial risk aversion. This was an important study because it was the first to link the two constructs. It also provides strong evidence of the predictive validity of the FinaMetrica risk tolerance test.

[a] "Some Guidelines For Financial Planners In Measuring And Advising Clients About Their Levels Of Risk Tolerance", Victor J. Callan, Ph.D., FAIM, FAICD & Malcolm Johnson, Journal of Personal Finance, Vol 1, Issue 1 (2006), 31 – 44.

[b] "Does Financial Education Influence Retirement Savings", Byrne, A. and Murphy, P., UniSuper Management Pty Limited (2006).

[c] Hallahan, T. A, Faff, R. W. and McKenzie, M. D., 2004, An empirical investigation of personal financial risk tolerance, Financial Services Review 13(1). 57-78.

[d] "A five nation of examination of financial risk tolerance", Goetz, J.W., PhD Dissertation (2006), Texas Tech University (Unpublished). This dissertation won the American Council on Consumer Interests' 2007 Award.

[e] "On The Linkage Between Financial Risk Tolerance And Risk Aversion", Faff, R.W., Malino, D. and Chai, D., The Journal of Financial Research • Vol. XXXI, No. 1 • Pages 1–23 • Spring 2008.

Appendix A

RISK TOLERANCE: THE EVIDENCE FOR AN ENDURING PERSONAL TRAIT.

Psychology's view is that risk tolerance is a trait, i.e. a relatively enduring way one individual differs from another. However, traits can change over time or as the result of a life event, good or bad.

Let's start with the picture up to the end of 2007, i.e. before the Global Financial Crisis.

FinaMetrica has risk tolerance data going back to 1999. In Fig 1, we have plotted monthly average risk tolerance scores (mean 50, SD 10) from May 1999 to December 2007.

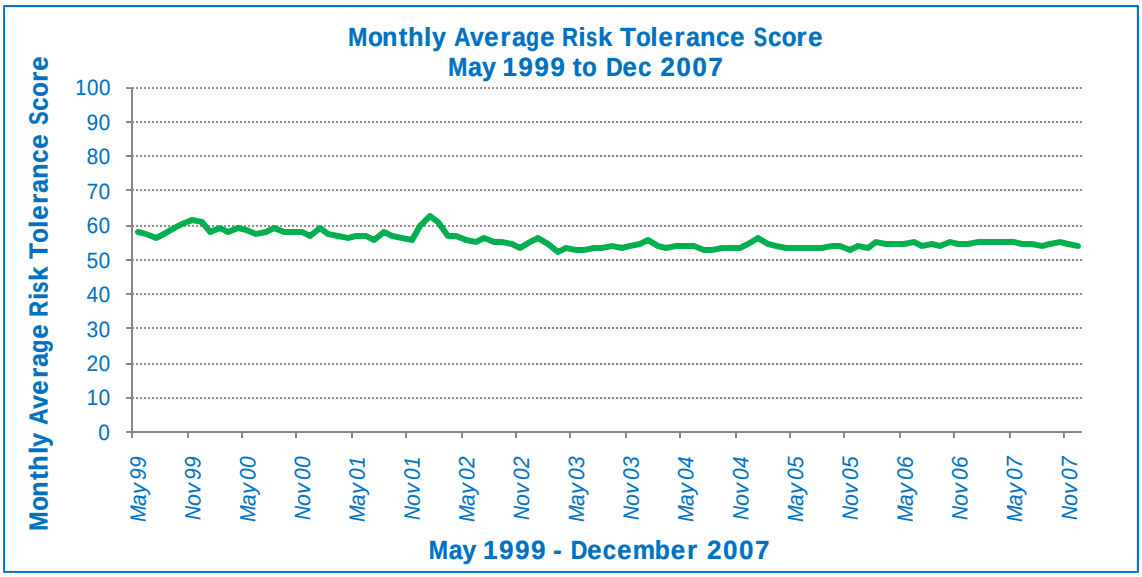

Fig 1

This data can be thought of as a monthly sampling of the same population. There is some noise in the data and what appears to be a slight downward trend. However, the data is actually collected from 4 populations – Australia, New Zealand, the US and the UK. The average risk tolerance scores for these countries are as in Fig 2.

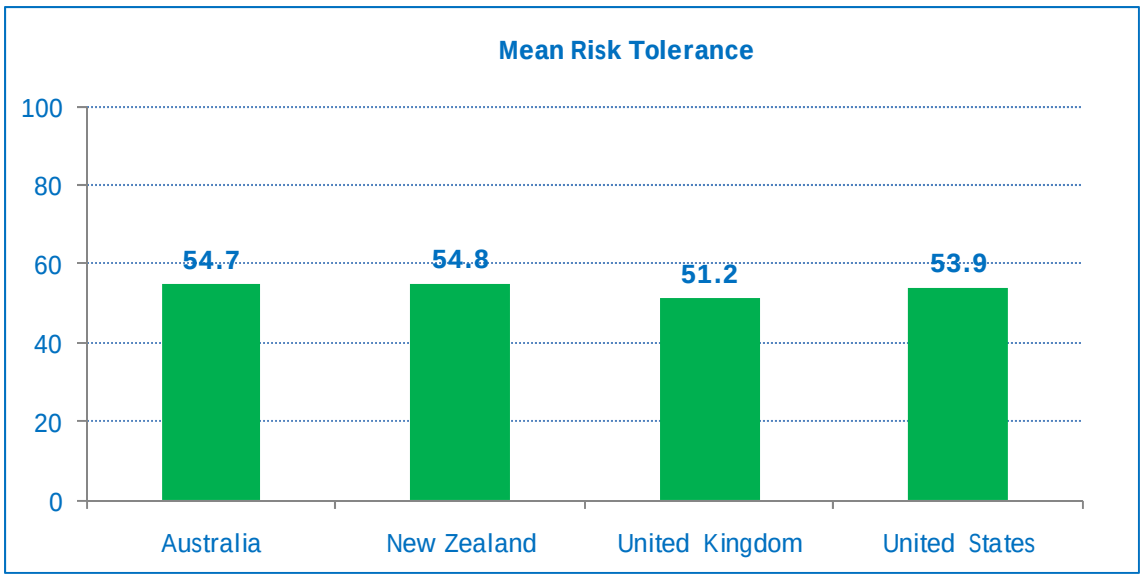

Fig 2

Starting in May 1999 the data in Fig 1 comes initially from Australia and New Zealand, and then the US is added to the mix in June 2002 and the UK in April 2004 (plus there are small numbers from other countries.) This changing composition would be expected to show up in a slight downward trend such as is evident in Fig 1.

Obviously, though, there is no indication in the risk tolerance data of fluctuations related to market moves, as illustrated in Fig 3.

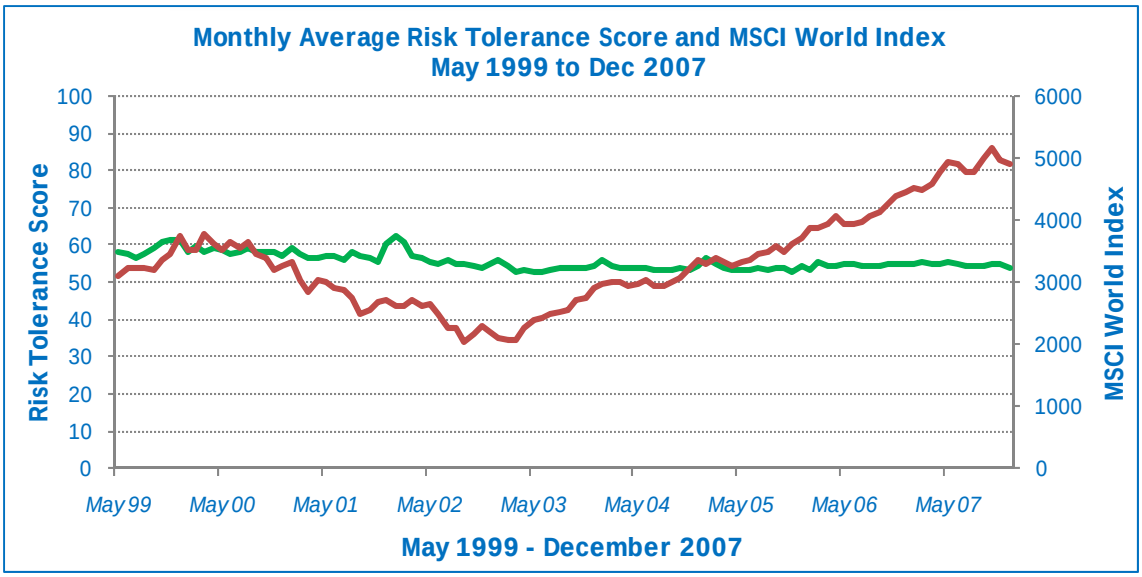

Fig 3

A more sophisticated demonstration of the stability of risk tolerance can be found in a study[4] involving FinaMetrica's Australian risk tolerance data and the authorative Westpac Melbourne Institute Monthly Consumer Sentiment Index from May 1999 to May 2007.

- The risk tolerance scores were adjusted for demographic factors.
- Each month was classified as Optimistic or Pessimistic.
- The risk tolerance scores were categorised as being from Optimistic or Pessimistic months.
- The two subsets were compared statistically.

The conclusion was "… the risk tolerance of Australian investors … does not appear to be affected by the general economic mood …".

A further investigation was carried out with regard to risk tolerance scores in months when the share market was rising and in months when the share market was falling; the finding was that "… the means of the two groups are not significantly different, indicating the absence of any relationship between risk tolerance scores and share market performance."

However, we have been talking about the situation pre 2008. The Global Financial Crisis is so severe that the 'old rules' may no longer hold true. It is well established that personality traits can be changed by life events, good or bad. For some the current crisis might be a life event if, for example, their retirement savings had been wiped out.

So what does the recent data tell us? The anecdotal evidence from FinaMetrica users is that they have seen no significant changes in clients that have been retested. But that is anecdotal. Harder data, average monthly risk tolerance scores from January 2007 to December 2008 is shown in Fig 4 below.

[4] "Effect of general economic conditions on investor risk tolerance – implications for financial planning"; Santacruz, Lujer; The FINSIA Journal of Applied Finance, Issue 1 2009, pp 33 – 40.

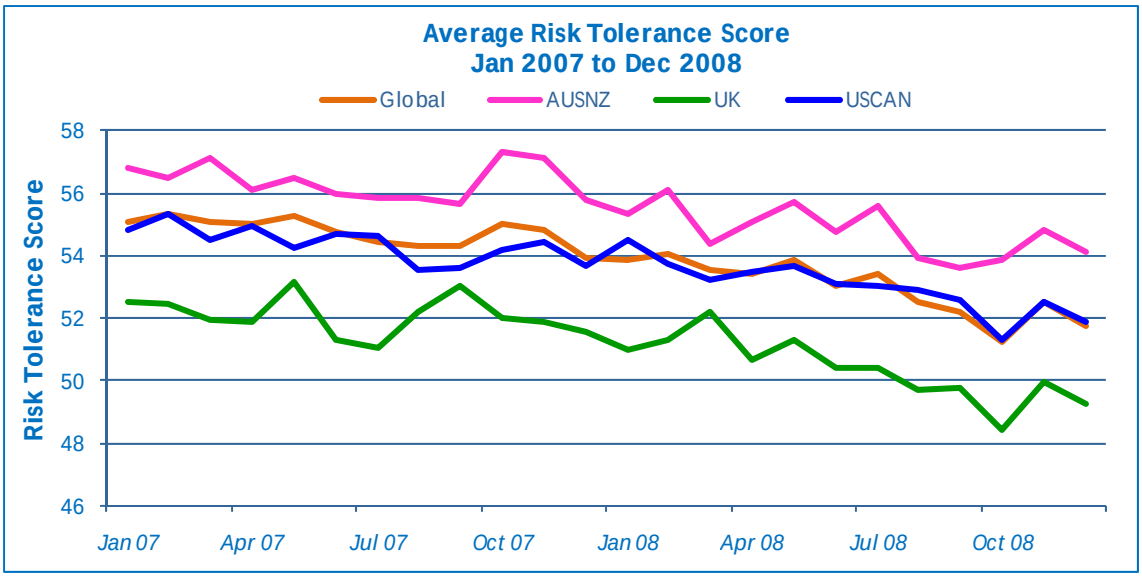

Fig 4

There is clearly a general pattern of falls but only of about three points, i.e. less than a third of a standard deviation.

However, the most convincing evidence of the stability of risk tolerance in the Global Financial Crisis, comes from a recent test/re-test study. Here test scores for individuals were compared. The first test was done in the first half of 2007 and the second test after mid-2008. The longest period between test and retest was 27 months and the shortest was 13 months. The results are shown in Fig 5's scatter diagram. The y-value for each point is the first test score and the x-value is the second test score.

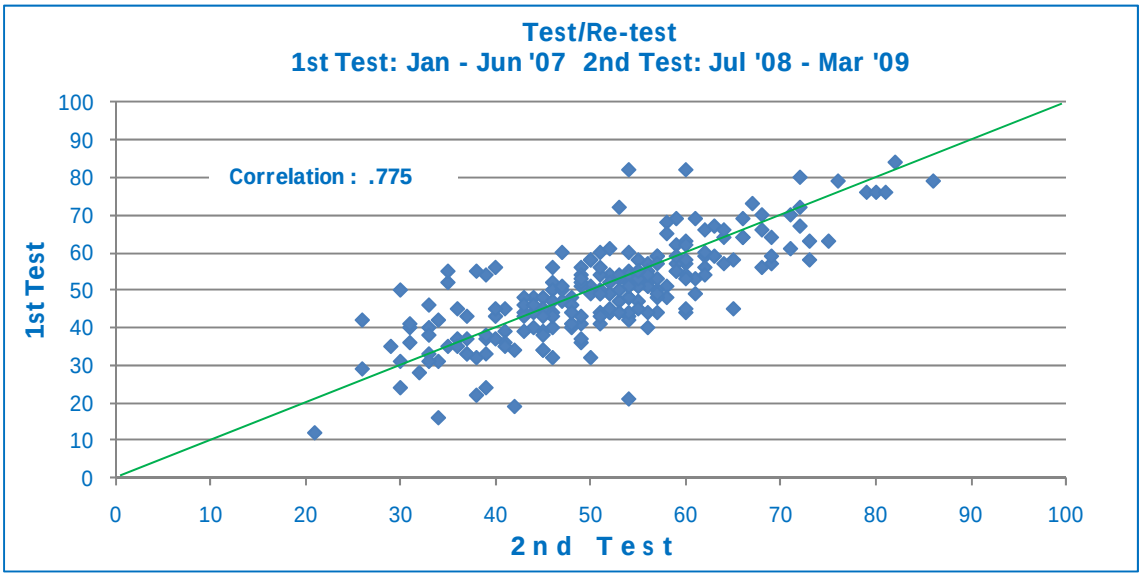

Fig 5

Again we see a small overall decrease, on average by 2.9 points, which is less than one-third of the standard deviation of 10 points, and would not have a significant practical impact. Also note that some clients risk tolerance scores have increased. However, there is an overall fall and it is worth considering possible explanations.

For some clients the crisis might have been a catastrophic life event and their scores might have decreased dramatically, bringing the average down. Also, there might have effectively been a change in

some of the questions asked in the questionnaire. The perceived riskiness of the answer options given for questions involving share market investment is likely to have increased with the result that the client would now choose a lower option leading to a lower score. Or, there might be something else.

A major research project is underway (mid 2009) relating to the impact of the crisis on the client's financial position and financial attitudes.

Question 4 in the survey is,

To what extent has the current share market decline affected your view of share market risk?

- No impact.
- I now believe that the share market is somewhat more risky than I had thought.
- I now believe that the share market is considerably more risky than I had thought.
- I now believe that the share market is enormously more risky than I had thought.

The interim results for this question are as shown in Figure 6 below.

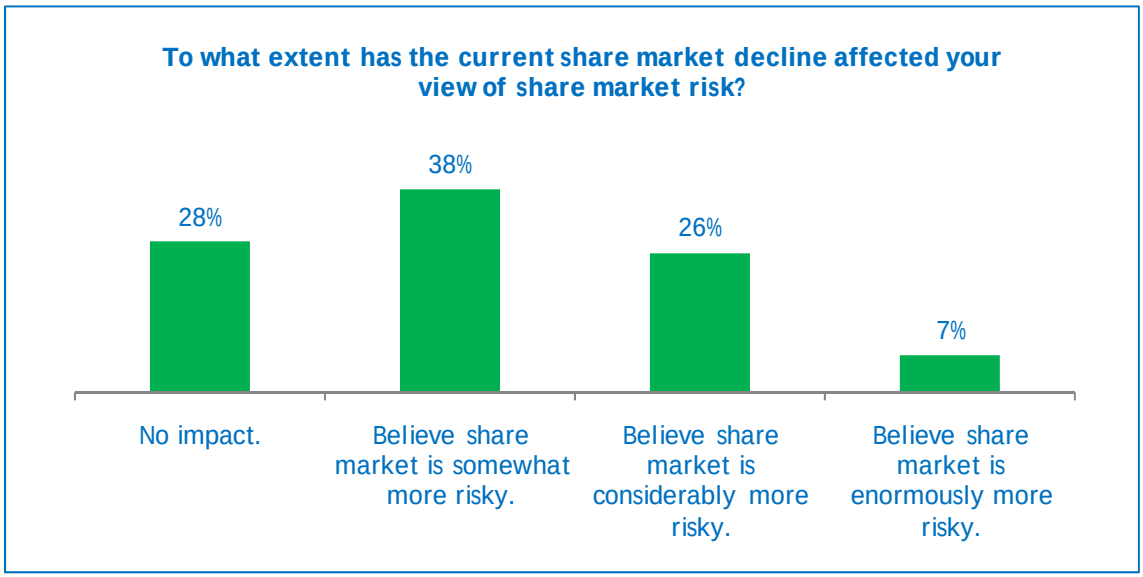

Fig 6

Thirty three percent (33%) of clients now see the market as at least considerably more risky and a further thirty eight percent (38%) see it as somewhat more risky. The risk perceived has increased for two out of three clients. This is a dramatic change in risk perception - much more significant than the small change in risk tolerance. Of course, a client's investment losses are likely to have reduced risk capacity, i.e. the amount a client could lose before putting financial goals at risk. So reduced risk capacity may also be a factor in behavioural change.

But overall, changed behaviour can best be attributed to changed risk perception.