FinaMetrica's Response to the Financial Services Authority's

Guidance Consultation

Assessing suitability:

Establishing the risk a customer is willing and able to take and making a suitable investment selection

Introduction

FinaMetrica welcomes the FSA's guidance paper. To our knowledge it is the first serious attempt by a regulator to address the issues of an investor's willingness and ability to take risk. We see it as the latest chapter in a concerted effort by the FSA to lift investment advice standards to a level that provides appropriate consumer protection. In our opinion, the FSA continues to demonstrate world leadership in this field. We understand that many governments around the globe are struggling with both low levels of trust in financial advisers and the financial system itself. This paper makes a significant contribution to improving the quality of advice which is a starting point on the journey to a more secure investment world.

We have grouped our comments under four general themes: The Meaning of "Willingness to Take Risk" and "Ability to Take Risk", Psychological versus Financial Questions, Good Practice versus Best Practice and Explaining Investment Risk. Our key points are:

- We agree with the FSA that the industry-standard approach to 'risk profiling' which is to use a 'portfolio-picker' questionnaire should no longer be acceptable practice. These short cut quizzes conflate information about parameters that should be considered independently into a single score that leads directly to a portfolio recommendation. Quite rightfully the paper has singled out these opaque and simplistic quizzes as being the antithesis of quality personalised outcomes. In our opinion, nothing is more likely to lead to an improvement in the quality of advice than this condemnation of 'portfolio-pickers'. This will force all industry participants to consider how to make proper assessments of the relevant parameters and how to have proper regard to them in formulating advice.
- We ask the FSA for greater clarification based on further analysis [in relation to the concern] that their understanding and explanation of the customer's ability to take risk is overly simplified. The opinion in the paper does not reflect current best thinking in relation to the options open to a customer.
- We are disappointed that the FSA has not acknowledged that there is a scientific discipline, psychometrics, for assessing psychological constructs such as willingness to take risk and seems unaware of the evidence that non-psychometric techniques have been proven to be inadequate.
- We would dispute the FSA's view that the leading of a customer's thinking in relation to explanation of investments and risk prior to or during the assessment of risk tolerance is good practice. Such behaviour simply leads to unreliable and probably distorted outcomes.

- We suggest that a critical issue not dealt with by the FSA in this paper is how investment risk is explained. This needs to change radically to a more relevant and personalised process that will be better understood by the customer. This requires fundamental changes to the ways both fund managers and investment advisers explain risk.

1) The Meaning of "Willingness to Take Risk" and of "Ability to Take Risk"

The term "willingness to take risk"[1], like “risk tolerance”, implies that risk is a negative and is something to be endured or avoided. However risk, in and of itself, is neither good nor bad. It is possible to have both too much risk and too little risk. Too much risk can be a threat to an individual's financial well-being and too little risk can mean failing to take advantage of opportunities.

Risk tolerance/willingness to take risk is not an upper limit on a negative but rather a comfort zone where that individual balances between, what is for them, too much risk and too little risk.

It could be useful to provide a definition of willingness to take risk. Here, guidance could be obtained from the definition of risk tolerance found in ISO 22222 Personal Financial Planning Standards, namely, “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”.

In talking about the risk a customer is able to take, reference is made to "capacity for loss" which is explained as:

> *By 'capacity for loss' we refer to the customer's ability to absorb falls in the value of their investment. If any loss of capital would have a materially detrimental effect on the standard of living, this should be taken into account in assessing risk that they are able to take.*

This is a somewhat narrow and overly simplified view of what is more commonly called "risk capacity".

Let us consider the characteristics of a situation where it would be possible for any loss of capital to have a materially detrimental effect on the customer’s standard of living. The first consideration is whether or not it is the then current standard of living or a future standard of living. For simplicity, let us consider here the former. In this case the individual will probably be retired and living off investments.

However, even this scenario is not straightforward. It is most unusual for an individual to have sufficient funds relative to their desired standard of living to be able to fund this from a risk-free investment strategy. Hence the vast majority of retirees will take some risk in anticipation of the higher returns required to fund their preferred retirement. Notwithstanding that if they are unlucky, they may experience significantly lower than expected returns in the first few years of their retirement. They may or may not be able to recover from this and, if they do not recover, this could have a "materially detrimental effect on their standard of living".

[1] The terms ‘willingness to take risk” and “ability to take risk” are re-phrasings of terms used in the paper to facilitate discussion of the concepts here.

The best practice approach in such a scenario is to start by identifying the customer's desired standard of living and also a minimum acceptable standard of living. The customer needs then to articulate their preferred likelihood of success for each, and be prepared to explore alternatives using stochastic modelling.

The focus becomes more on risk capacity than on the difficult-to-quantify "ability to absorb falls in the value of their investment", where risk capacity is measured by the likelihood of achieving the minimum acceptable standard of living. The desired likelihood of achieving the minimum acceptable standard of living is usually not less than 80 percent and can be as high as 99 percent.

From a best practice viewpoint, the most common error is to select a portfolio whose expected return will (just) achieve the desired standard of living, i.e. a 50% chance of success, but which has a lower-than-desired chance of achieving the minimal acceptable standard of living. This error usually arises because no attempt is made to identify the customer's minimal acceptable standard of living and the desired likelihood of achieving it.

There is a difference between best practice and the best practice that can be achieved by the bulk of advisers. A serious amount of work needs to be undertaken to explore how this necessary compromise might be best explained to customers. The key point of our argument is the recognition that risk, in and of itself, is neither good nor bad. The risk simply needs to be explained to customers in a manner which enables them to make an informed decision about the risk they take on when implementing their adviser's investment recommendation. This links to our fourth point that risk is explained poorly, dare we say misleadingly by fund managers, and advisers compounds the problem.

2) Psychological versus Financial Questions

Much of the information required to give good investment advice is readily discoverable and easily quantifiable financial, demographic and aspirational data: assets and liabilities, income and expenses, family structure, goals and the like. It is simply a matter of explaining what information is required and obtaining it.

Such is not the case when it comes to assessing a psychological trait such as willingness to take risk. There is an established discipline, psychometrics, for doing this which has scientific 'rules' for developing questions.

Some of the comments in the paper are clearly not informed by knowledge of psychometrics or the research on risk tolerance/attitude. Paragraph 3.19 is a case in point.

> *We are also concerned that some questionnaires invite a customer to select the option with which they most agree with. Options that are vague could be interpreted by customers and firms in different ways leading to poor* ***outcomes****. [Emphasis added.]For example, where questionnaires use non-committal 'middle' answers customers could interpret these as having a neutral effect (effectively a non-answer): these could be selected by customers to reflect a lack of understanding, a lack of investment experience or may simply indicate that they do not agree with any of the answer options. If the firm interprets such answers as a true 'middle' answer, scoring it as reflecting a mid-range attitude to risk without further discussion with the customer, a flawed risk profile can result.*

These comments could be misconstrued, and have been in one instance of which we are aware, as criticism of some of the questions typically found in a psychometric questionnaire. In a questionnaire constructed in accordance with psychometric disciplines, all questions will have been tested for Usability (understandability and answerability) and only questions with high Usability will have been included. So, while it might appear that some of the answers to the questions in a psychometric questionnaire "... could be selected by customers to reflect a lack of understanding, a lack of investment experience or may simply indicate that they do not agree with any of the answer options", this will not be the case. Moreover, the output from a psychometric questionnaire will be based on the answers to all questions with no single question having a significant effect.

In terms of outcomes, a psychometric test provides a more valid, reliable and accurate assessment than any other assessment technique. (See "Assessing Risk Tolerance As a Fiduciary" in Appendix A. This paper was one of the submissions made by The Committee for Fiduciary Standards to the SEC late last year.)

Of course, in the typical risk questionnaire, ambiguous questions are commonplace but as the paper does not provide any examples we cannot comment on them specifically. However, questions with a neutral middle option are not per se inferior provided the question and answers constitute an unambiguous whole. Such questions are used extensively in psychometric tests.

As a general comment, non-psychometric questionnaires could well satisfy the guidelines but still not provide a valid and reliable assessment of willingness to take risk for reasons explained in the paper mentioned above. In fact, independent studies cited in the paper show that the level of accuracy in industry-standard questionnaires is wretched.

3) Good Practice versus Best Practice

Quite correctly the paper is seeking to establish standards for a minimally acceptable quality of advice and not best practice. However, the danger is that what would be good practice in achieving a minimally acceptable quality of advice may not be good practice when aiming higher.

Reference has already been made to situations where there may be a difference between what would be considered good practice when aiming at a minimally acceptable quality of advice and best practice. A further specific example occurs in the paper at 3.31, namely:

> ***Good practice***
> *A firm provided a clear and balanced guide to investment risk for the customer to read **in advance** of assessing their risk profile. This included a summary of the process for assessing the risk a customer was willing to take. [Emphasis added.]*

To make a valid and reliable estimate of willingness to take risk it is important for the questions to be in plain English so that explanation is not required. Explaining questions introduces the potential for bias and reduces the integrity of the test. Where a "balanced guide to investment risk" is given as pre-reading there is a danger that this may just confuse the customer and it is likely that the customer will ask for clarification which introduces the possibility of non-standardised explanation.

The financial literacy of consumers generally is low, much lower than most advisers appreciate because they are so familiar with the concepts and terminology. Customers are often reluctant to

acknowledge to their adviser that they do not understand concepts and terms which the adviser apparently expects them to understand because they do not want to appear 'ignorant' and/or to reveal how dependent they are on the adviser's expertise. So, best practice is to make an assessment of willingness to take risk before there has been any discussion of investments using plain English questions that do not require explanation. Once the assessment has been made it can then be discussed with the customer in the context of, amongst other things, relevant investment strategies. Good explanation of investment risk is obviously important, the issue is simply one of when should it be addressed in the advising process.

We understand that the general standard of advice is poor, which must be the FSA's primary concern. However we would hope that those who have already achieved best practice and those that are striving for it will not be inhibited by the guidance paper.

4) Explaining Investment Risk

Having a well informed understanding of the risks they are actually taking is an important protection for consumers. It can act as a check on whether their willingness to take risk is accurately reflected in the advice they have been given.

Unfortunately, most customers do not have a well-informed understanding of investment risk; this can be attributed to the investment industry's culture of commission-based, transactional selling. Product providers earned higher fees from riskier products and advisers were paid higher commissions. Both had a commercial incentive to understate risk.

Typically, while the information provided might be technically accurate, it is often both misleading and difficult for the customer to understand. A classic example of misleading information is the 'funnel' chart, as discussed in Appendix B, which is designed to show that risk decreases over time when, in fact, the opposite is the case.

It is almost always true that individuals make better sense of explanations of a complex nature when the matter can be put into a personal context. A theoretical description of investment and investment risk is likely to be significantly less meaningful to a prospective investor than one that is more precisely framed in the light of the investor's personal circumstances.

- "You have £300,000 invested. Did you know that three times in the last 30 years the portfolio I am suggesting as likely to meet your needs would have lost more than 30% in value. If such a fall were to happen again in the near future you could find your £300,000 being valued below £200,000, etc."
- "All portfolios are subject to some degree of volatility and are constantly rising and falling in value. The 50% equities portfolio I am recommending can be expected to be falling in value one-third of the time. So, when you check your portfolio there's a one-in-three chance it will be falling in value, etc."

Conclusion

Overall we believe that the paper makes a significant contribution to the delivery of advice that customers are likely to trust. In particular, we expect that the condemnation of 'portfolio-picker' questionnaires will raise industry standards because it will force all industry participants to consider

how to make proper assessments of the relevant parameters and how to have proper regard to them in formulating advice. However, there are some shortcomings in the paper which we hope will be addressed, namely:

- The FSA's treatment of risk capacity is over simplified and does not reflect current best thinking in relation to the options open to a customer.
- We are disappointed that the FSA has not acknowledged that there is a scientific discipline, psychometrics, for assessing psychological constructs such as willingness to take risk and seems unaware of the evidence that non-psychometric techniques have been proven to be inadequate.
- We would dispute the FSA's view that the leading of a customer's thinking in relation to explanation of investments and risk prior to or during the assessment of risk tolerance is good practice. Such behaviour simply leads to unreliable and possibly distorted outcomes.
- We suggest that a critical issue not dealt with by the FSA is how investment risk is explained. This needs to change radically to a more relevant and personalised process that will be better understood by the customer.

We are delighted to be participants in a revolution where respect for the individuality of customers is the primary goal.

FinaMetrica

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Assessing Risk Tolerance as a Fiduciary

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Abstract: Assessing a client's risk tolerance is a critical step for a fiduciary in meeting know-the-client obligations so that the client's best interests can be served. There is a scientific discipline, psychometrics, for assessing variables such as risk tolerance. The article provides an introduction to psychometrics and psychometric standards. Industry-standard 'risk' questionnaires do not meet psychometric standards and are shown to be conceptually flawed and, in practice, to produce wildly inconsistent results. Not surprisingly, advisors' estimates of clients' risk tolerance are shown to be inaccurate to the point where it would be better if they made no attempt to assess risk tolerance and simply assumed everyone was average. It is argued that meeting a fiduciary standard in assessing risk tolerance requires the use of a psychometric test.

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Introduction

In almost all advanced economies, investment advisers are now required by law to engage in financial due diligence activities. As a fiduciary, the threshold requirement for an advisor is to put the client's interests first. In order to do that the advisor must know what the client's interests are. Hence, an advisor's fiduciary obligations begin with know-the-client, which must include knowing the client's risk tolerance. Nearly all professional associations, certification bodies and regulatory agencies require advisers to measure and document a client's risk tolerance (along with other qualitative and quantitative data) prior to giving advice.

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." Risk tolerance can be thought of as expressing where an individual strikes the balance between making the most of their opportunities and not putting their financial well being at risk. In psychology, risk tolerance is also sometimes called "risk attitude", "risk appetite" or "risk propensity," and, in finance and economics, "risk aversion".

Ideally, an investment strategy will be consistent with the investor's risk tolerance. However an investor may choose to take more or less risk than is consistent with their risk tolerance: for example, more risk because their goal(s) would otherwise be unachievable or less risk to give greater certainty of achieving their goal(s). But if an investor makes such a decision it must be made knowingly. In giving advice, an advisor must know whether or not the risk in the investment strategy being recommended is consistent with the investor's risk tolerance and advise the investor accordingly. Hence, an advisor must be able to properly assess an investor's risk tolerance.

Typically, advisors use a 'risk' questionnaire of 5 to 20 questions. Unfortunately, industry-standard 'risk' questionnaires are demonstrably flawed and do not provide a proper assessment of risk tolerance. However, before exploring their shortcomings, we should consider how a valid and reliable assessment can be conducted.

Psychology and Psychometrics

Psychologists have been investigating risk tolerance for more than 50 years. A large body of knowledge based on studies that have been independently refereed and replicated now exists. However, when financial services professionals seek academic/researcher input it is almost invariably from finance and economics. Unfortunately, the silos in academia being as they are, very little of the psychologists' knowledge about risk tolerance has made its way into economics and finance.

Risk tolerance is a psychological trait, i.e. a relatively enduring way one individual differs from another. There are four types of risk tolerance: physical, social, ethical and financial[i]. 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. Since the late 19th century, psychologists and statisticians have been developing techniques to quantify and assess psychological constructs such as risk tolerance. While this development has not been free of controversy, there is now a widely accepted discipline – psychometrics - dealing with psychological testing and assessment. Today, the technical quality of any psychological assessment

device (which includes questionnaires) can be measured against internationally agreed psychometric standards[ii].

Callan and Johnson[iii] and Roszkowski, Davey and Grable[iv] discuss the application of psychology and psychometrics to the assessment of risk tolerance in detail. Their views will be summarized here.

To meet psychometric standards, a test must go through a rigorous development process. First, a large pool of questions is created and tested on representative samples of the population for which the test is intended to see if the questions are understandable and answerable by this audience (Usability Trials). Questions that seem straightforward are often revealed to have poor understandability or answerability. Low financial literacy is a major obstacle. Any technical term, even one as simple as "bonds", causes problems. With questions about rates of return the more informed will want to know if this is before or after inflation … and any mention of "after- inflation" in a returns question is too difficult for most. As for questions involving means, standard deviations or confidence levels and the like, they may as well be in another language, which in reality they are. Therefore high-school-standard plain English is the order of the day.

From the Usability trials questions with apparent promise, based on their understandability and answerability, are tested on further representative samples using statistical criteria (Norming trials). The results are examined to determine if the statistical characteristics of the questions and the scoring algorithm are proper. Upon testing, questions that at first appear insightful are often revealed to have little or no statistical value in differentiating one respondent from another. Typically, question development requires multiple loops through both trial processes.

What Makes a Test Valid?

Broadly defined, a valid test is one that actually measures what it purports to measure. There are various aspects of validity, of which content validity and criterion-related validity are the most important. If a test has good content validity, the questions it asks are seen to be very relevant by those with expertise in the field. Criterion-related validity is a measure of behavior related to the construct being tested (the criterion). In the case of risk tolerance, the criterion would be actual behavior reflecting risk-taking propensity, e.g. the proportion of stocks owned within a portfolio. If the criterion is collected at the same time the test is administered, it is called *concurrent* validity; if the criterion does not materialize until some later time, it is called *predictive* validity.

What Makes a Test Reliable?

The score on any test consists of two parts: a true score and an error (that is, test score = true score ± error of measurement). All tests have some margin of error, so it is a matter of degree. Reliability can be conceptualized as the correlation of the true score to the test score. In other words, reliability tells us what proportion of the test is non-error. If the error component is large, then the test is unreliable and will fail to give consistent results from one testing to the next, even if the respondent's risk tolerance has not changed. The error generally comes from sources in the test itself (such as ambiguous wording.) Other things being equal, the more questions of the same type one asks, the more reliable an instrument becomes. For satisfactory reliability, the correlation should be .8 or greater. Psychologists divide behavior into cognitive (intellectual) and affective (emotional) domains. Risk tolerance falls into the affective domain. Years of research have shown

that ordinarily it takes more questions to reliably assess affective traits than cognitive ones, typically 20+.

Industry-Standard 'Risk' Questionnaires

Our industry is bedevilled by the superficially plausible of which there is no better example than the industry-standard 'risk' questionnaire. The problem with industry-standard questionnaires is that they have been arbitrarily constructed without regard to psychometrics. Typically, they contain too many "bad" questions and not enough "good" questions. As a consequence, their results are neither valid nor reliable.

Years ago it was not uncommon to find questions relating to physical risk tolerance in questionnaires designed to measure financial risk tolerance. Today, the more prevalent problem is that many risk tolerance questionnaires deal with financial matters that are not part of the construct of risk tolerance. This is a legacy from the ubiquitous asset allocation calculators, which were designed to produce an asset allocation (or model portfolio) recommendation based on brief questionnaires about (in addition to risk tolerance) time horizon, withdrawal expectations, investment experience, risk capacity and the like. While time horizon, etc. are relevant to investment advice they are not relevant to risk tolerance. So the first problem is irrelevant questions. The second is the use of 'technical' terms, as discussed above.

Industry-standard questionnaires have not been subjected to usability or norming trials so it is not possible to say definitively whether any of the questions are "good" questions. However, questions that are irrelevant or too technical can be identified as "bad" questions by a sight check. Typically, the number of "bad" questions identified by sight checking is such that even if all the other questions were "good" questions there would not be sufficient to achieve acceptable reliability. The conceptual flaws in industry-standard questionnaires are evident in practice. A 2003 study [v] tested six industry-standard questionnaires and found low correlations between their results, .56 on average, indicative of unacceptable reliability. A much larger study[vi], tested 131 industry-standard questionnaires and reported:

> *"The findings show alarming results. For example, when all questions were answered in the most conservative way possible, the percentage of assets allocated to equities ranged from 0 to 70%. When answered in the most aggressive way, the percentage of assets allocated to bonds, or bonds and cash, ranged from 0 to 50%. This is perhaps the most telling finding of the entire study. [For an investor who proclaims himself or herself as maximally risk averse] for a given instrument and then have a 70% equity portfolio, or even close to a 70% equity portfolio, recommended to them is stunning. Equally stunning is the reverse. If all questions indicate that the investor wants to take risk and gain excessive returns, allocating 50% to bonds and cash doesn't match the portfolio to the investor at all. This mismatch of investor to portfolio is troubling, as it seems that the investor doesn't matter. Perhaps the questionnaire is only being completed due to SEC and legal issues, as, in some cases, the results seem predetermined. Regardless of what answers are gathered, the range of portfolio options seems to be limited. The SEC may require risk tolerance to be measured, but without any reasonable scoring system or uniform method, the measurement is so open to*

interpretation that firms can take total advantage by selling products not matched to the client. They can use typical questions and answers that seem to be applying the same logic as other firms, yet score the questionnaire completely different so that they can basically ignore the questionnaire results."

Advisors' Estimates of Investors' Risk Tolerance

While most advisors use some form of questionnaire, others rely on their interviewing skills. However, psychology tells us that interview-based assessments are less reliable than test-based assessments, even where the interviewer is a highly trained professional. We all apply heuristics in various aspects of life and this often leads to mistakes in judgment. An Australian study[vii] showed "financial advisors use of heuristics in categorising investors' risk tolerances is inefficient, and in some cases grossly under (over) estimates an investor's actual risk tolerance."

Given the shortcomings of the approaches typically used by advisors, it should come as no surprise that advisors' estimates of their clients' risk tolerance are alarmingly inaccurate, with estimates correlating to test results at only ~.4. In a 2005[viii] study, using a sample of 183 financial advisors and 290 of their clients, the advisors' clinical judgements, i.e. their estimates, were compared with the clients' actual risk tolerances as measured by a psychometric test. The results confirmed the general inaccuracy of advisors' clinical judgements – a correlation of only .41 with test scores. The results also showed strong evidence of gender stereotyping. The advisors over-estimated the risk tolerance of male clients and under-estimated the risk tolerance of female clients … and this was as true for female advisors as for male advisors.

A further 2005 study[ix], using a sample of 386 financial advisors and 458 of their clients, sought to determine how effective financial advisors and clients are at estimating risk-tolerance, and to test how well items from a risk tolerance test and demographic information can represent the judgmental process used to formulate these estimates (a paramorphic representation of the decision). The client's self-rating and the advisor's rating of the client produced a correlation of .40, evidencing considerable disagreement between advisor and client about the client's risk tolerance. Moreover, the advisor's rating correlated at .4 with the client's score on a test of risk tolerance. (The data also showed that when it comes to estimating one's own risk tolerance, clients are significantly more accurate than advisors.) The advisors' estimates of their clients' risk tolerance could be represented paramorphically in terms of a few variables. It was observed that advisors assign too much diagnostic value to certain demographic variables (sex, income, wealth and marital status) in estimating client risk tolerance. One of the conclusions reached was *"From a practical standpoint, taken together, these results suggest that if the choice is between client's and advisor's estimate as the basis for a decision, it might be better to rely on the client's opinion of himself or herself."*

But what does a correlation of .4 actually mean in practice? The answer can be seen in a study[x] done using a sample of 25 experienced advisors and 198 of their established clients during the development of the FinaMetrica risk tolerance test where the raw data is available. (For the other studies cited above, the raw data is not available.) Advisors' estimates correlated with actual scores at .38 (whereas clients' estimates were much more accurate, correlating at .68, i.e. clients had a much more accurate understanding of their risk tolerance than their advisors did.) The risk tolerance

scale used in this study has a mean of 50 and a standard deviation of 10, and is divided into seven risk groups as shown in Figure 1:

Risk Group	1	2	3	4	5	6	7
Score Range	0-24	25-34	35-44	45-54	55-64	65-74	75-100
No. in Group	1%	6%	24%	38%	24%	6%	1%

Fig 1

Advisors were asked to estimate their clients' risk tolerance in terms of the risk groups and then these estimates were compared with the actual results in the scatter diagram in Figure 2.

7	**Correlation .36**						
6				4	2		
5		3	4	26	16	4	
4		6	24	35	18	3	
3		1	13	15	9	1	
2		8	1	3	2		
1						**n=198**	
	1	2	3	4	5	6	7

Actual Risk Group

Fig 2

If advisors' estimates had been 100% accurate, there would have been a diagonal line of numbers in the white cells. The spread of numbers either side of the white cells illustrates the inaccuracy of the estimates. Advisors under-estimated in 70 cases and over-estimated in 56 cases. The numbers in the light grey calls represent errors of one risk group. The numbers in the mid-grey cells represent errors of at least two risk groups. Of the 198 cases, 72 were correctly estimated, 91 were wrong by one risk group, 29 were wrong by two risk groups and 6 were wrong by three risk groups. Being wrong by two or more risk groups is a gross error. Gross errors occurred with roughly 1 in 6 (35 of 198) estimates. Errors of this magnitude will, for example, mean that an advisor can believe an investor would be emotionally comfortable with the volatility of a 70% stocks portfolio when, in fact, the investor's risk tolerance is that of someone who would be comfortable with 30% stocks. Overall, advisors would have been more accurate if they had made no attempt to estimate risk tolerance at all and rather had simply assumed all clients were average, i.e. in risk group 4, as shown in Figure 3.

	No. of Errors	
Error (In Risk Groups)	**For Actual Estimates**	**For Assumption of Average**
0	72	83
1	91	89
2	29	26
3	6	0

Fig 3

Advisors' Responses

Interaction with thousands of advisors and their managers over the past twelve years has highlighted a general reluctance to change from current processes. Advisors using industry-standard approaches to risk tolerance assessment are reluctant to accept that their estimates might be as inaccurate as those in the studies cited above. Even if they accept that advisors' estimates as a whole are inaccurate they believe they are the exception to the rule, perhaps mistaking experience for expertise. Interestingly, advisors have high risk tolerance (significantly higher than investors, which can lead to its own set of problems) and risk tolerance correlates with overconfidence[xi]. A demonstration of advisors' overconfidence can be found in a study[xii] involving 344 Australian CFPs that found "extensive overconfidence in respondents' ability to make judgements under uncertainty as shown by a narrow range of forecasts and a substantial number of inaccurate predictions."

At the institutional level, management often acknowledges that psychometric testing is a superior methodology. However they are reluctant to make it mandatory because of resistance from some advisors (often big producers.) They are also reluctant to make it optional because this would lead to two different compliance regimes raising difficulties in defending the non-psychometric approach. It is also often the case that Compliance has developed the current questionnaire and does not want to be seen to be acknowledging its shortcomings.

Conclusion

While being mistaken about the investor's risk tolerance will not necessarily result in dangerous advice, in some cases it will. Some investors will be over-exposed to risk, which can have disastrous consequences in a market downturn. Then, increasing anxiety can cause a panicked sale at or near the bottom, destroying financial and emotional well-being. Advisors aspiring to meet a fiduciary standard must ensure that they have a proper understanding of their clients' risk tolerance, without which they **cannot** act in their clients' best interests. The evidence of the failure of current industry-standard approaches to meeting this obligation is overwhelming.

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[i] Jackson, D.N., Hourany, L., & Vidmar, N.J., 'A Four Dimensional Interpretation of Risk-Taking', *Journal of Personality*, Vol. 40, 1972

[ii] For example, see American Educational Research Association, American Psychological Association and National Council on Measurement in Education (1999), *Standards for Educational and Psychological Testing*, Washington, DC: American Educational Research Association.

[iii] Callan, V. J. and Johnson, M., 'Some Guidelines For Financial Planners In Measuring And Advising Clients About Risk Tolerance', *Journal of Personal Finance*, Volume 1, Issue 1, 2002

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

[v] Yook, K.C. and Everett, R. 'Assessing risk tolerance: questioning the questionnaire method', *Journal of Financial Planning*, August 2003.

[vi] Rice, D. F., 'Variation in Risk Tolerance Measurement – Toward a Uniform Solution', PhD Dissertation, Golden Gate University, 2007

[vii] Subedar, Z., McCrea, M. & Gerace, D., 'The Validity of Financial Advisor's Heuristic Risk Tolerance Categorisation: Evidence From a Risk Tolerance Assessment Tool', *The 19th Australasian Finance & Banking Conference*, 2006

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[ix] Roszkowski, M. J., & Grable, J. E., 'Estimating Risk Tolerance: The Degree of Accuracy and the Paramorphic Representations of the Estimate', *Financial Counseling* and Planning, Volume 16 (2), 2005

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[xi] Nosic, A., and Weber, M., 'Determinants of Risk Taking Behavior: The role of Risk Attitudes, Risk Perceptions and Beliefs.' *Sonderforschungsbereich 504 Publications 07-56, University of Mannheim,*2007

[xii] van de Venter, G. & Michayluk, D., 'An Insight into Overconfidence in the Forecasting Abilities of Financial Advisors', *Australian Journal of Management*, Vol. 32, No. 3, 2008

Appendix B

'Funnel' charts[2], such as the one in Fig 1, are designed to show that risk decreases over time.

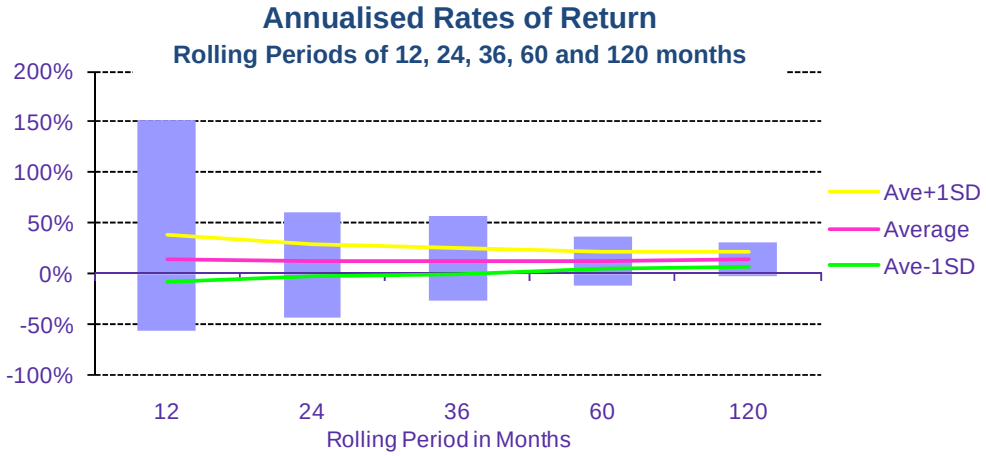

Fig 1

The chart does show that the annualised standard deviation reduces dramatically over time. But does this mean that risk decreases over time?

The mathematical trick in these 'funnel' charts is that the calculations are based on annualised rates of return. Investors cannot 'eat' annualised returns. What they 'eat' is the end-value of their investment. End-value is determined by compounding the annualised rate of return over the period of the investment. Small variations in the annualised rate of return will have large effects over long periods.

Fig 2 reproduces the Fig 1 chart from above but this time based on end-values rather than annualised rates of return.

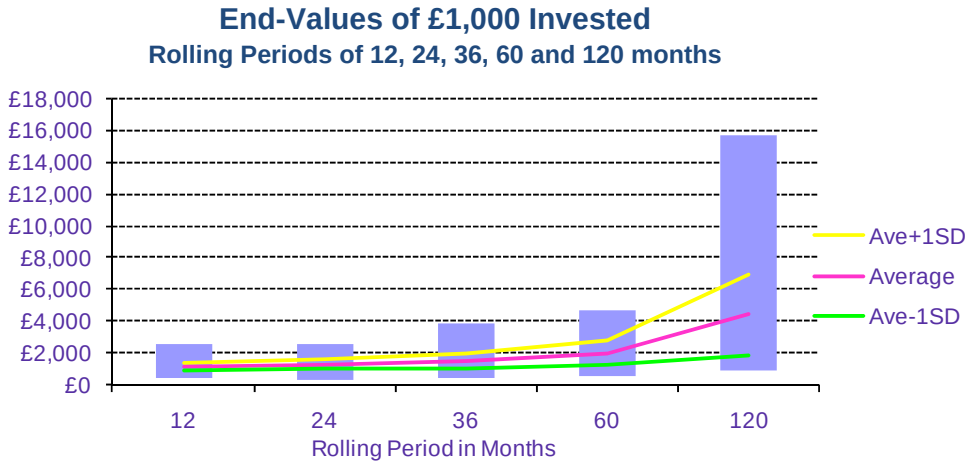

Fig 2

[2] The charts in Figs 1 and 2 are based on monthly FTSE Accum index data for 1970 to 2010 inclusive.

This looks very different. For 12-month periods, the standard deviation is 19% of the average. For 120-month periods, the standard deviation is 44% of the average. There's not much decrease in volatility over time when you look at the right parameters … in fact, the very opposite!

Clearly, 'the funnel' is misinformation. It's accurate but misleading. It creates the false impression that uncertainty is only really a problem in the short term. In reality, 'the spray' is a more valid illustration.