

# On the Stability of Risk Tolerance

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An important discussion  
for all involved in  
financial advisory services.

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# On the Stability of Risk Tolerance

## Introduction

It is widely believed that (financial) risk tolerance is highly unstable and particularly subject to market conditions. However, through a series of independent studies there is now strong evidence that this view is incorrect. The most recent study clearly demonstrates the stability of risk tolerance across the 2003 to 2009 market rises and falls through detailed analysis of test/retest data, involving two tests of the same individuals, the first during the 2003-7 bull market and the second in the subsequent bear market. The study confirms the anecdotal evidence from FinaMetrica subscribers that clients' risk tolerance scores remained remarkably stable through the most turbulent market conditions in living memory.

Many advisors and others involved in financial advisory services will now need to change their views about the nature of risk tolerance, how it should be assessed and its role in the financial advising process - all of which will be discussed under Consequences for Advice.

However, before considering the consequences we should review the evidence for the stability of risk tolerance and before that we should examine why the contrary view is so widespread.

## Causes of Mistaken View

The major cause is a misconception about risk behaviour: namely, the belief that risk tolerance is the primary, if not sole, driver of risk behaviour, which leads to an assumption that any change in risk behaviour must be due to a change in risk tolerance. However, risk behaviour will be a function of a number of factors, the one most relevant to behaviour during market turmoil being risk perception. Changes in risk perception are likely to lead to changes in behaviour.

The misconception is often evident in 'risk tolerance' questionnaires where questions purporting to test risk tolerance do not control for risk perception. The answer to a question such as "What proportion of your investments (or a windfall) would you invest in stocks/shares/equities?" will be influenced by both risk tolerance and risk perception. When this question is asked in the form of "What proportion of your investments are in stocks/shares/equities?" there is an additional complication. Not only will risk perception have been a factor at the time the investment decision was made but, if there has been no rebalancing, the current proportion of stocks/shares/equities will be attributable to market rises and falls in addition to any investor characteristics.

Academic studies which show risk tolerance rising and falling with markets are typically based on data which does not control for risk perception. Perhaps the most frequently cited study is that of the Survey of Consumer Finance data by Yao, Hanna & Lindamood (2004) which concluded that "Financial risk tolerance tends to increase when stock returns increase and decrease when stock returns decrease." However, having conducted a further study of the same data, Hanna & Lindamood (2009) found "It seems plausible to conclude that the SCF risk tolerance measure is not a stable measure related to risk aversion but instead is an attitude reflecting expectations." Nonetheless, the original study continues to be cited without qualification.

Some financial advisors report that their clients' risk tolerance collapses in bear markets. When questioned, their reason for this conclusion is that clients want to sell out of investments that they

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were previously quite comfortable with. There is, however, an alternative explanation, namely that clients were not only over exposed to risk but also did not understand the risks they were taking until these risks actually eventuated. That (some) clients will be over-exposed to risk should come as no surprise because studies show that advisors' estimates of their clients' risk tolerance are highly inaccurate: test scores and advisor estimates correlating at around .4. Further, industry-standard risk questionnaires tend to be biased towards higher risk/return outcomes. Adding in the fact that advisors are significantly more risk tolerant than their clients only increases the likelihood of over-exposure to risk. Finally, it is perhaps not coincidental that the higher the risk/return, the higher the fees and commissions payable can be.

When it comes to explaining risk, the financial services industry as a whole provides risk and return illustrations which downplay the downside risk, particularly the likelihood of outliers, while focusing on the upside potential. Financial advisors often rely on these explanations when explaining risk to clients.

The end result is that many clients are over exposed to risk and do not understand the risks that they are taking. But, when markets fall, it is easier for advisors to explain client unhappiness as being caused by a collapse in risk tolerance than it is to recognise the shortcomings of their advice and accept responsibility for it.

The media does not help. When markets fall the emphasis is on doom and gloom. Negative stories are highlighted. Pop quizzes which cast investors as panicked lemmings are featured. The focus is always on the funds that have moved rather than the funds that have stayed put. Changes in behaviour are usually portrayed as evidence of a collapse in risk tolerance, often supported by quotes from academics, industry executives or advisors.

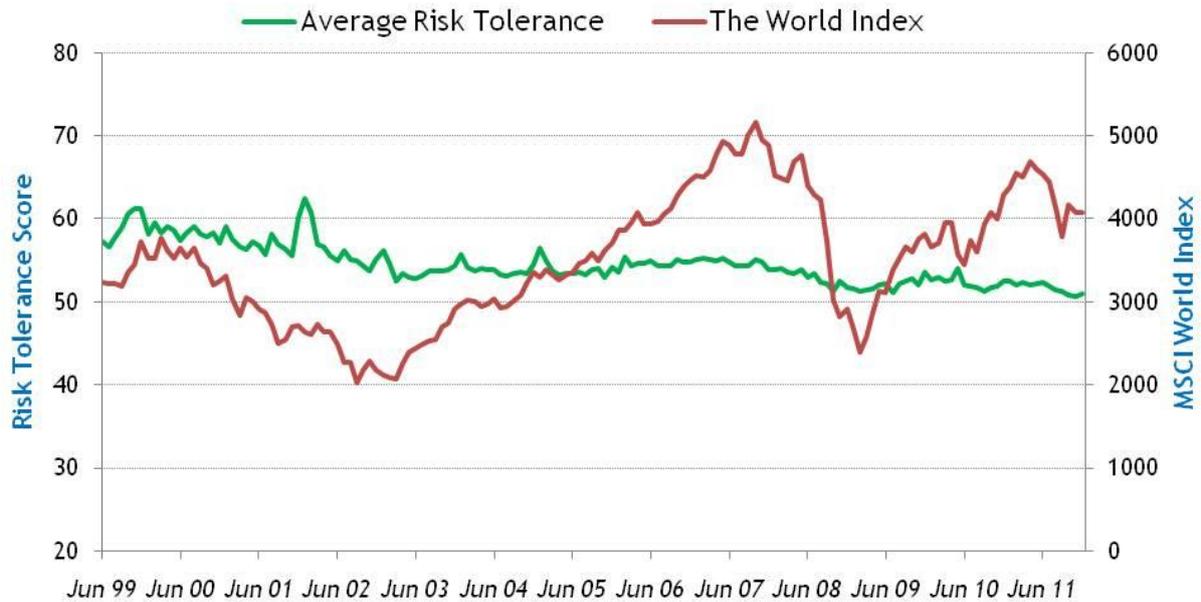
These three factors –misconception about the causes of behavioural change, advisors not recognising and accepting responsibility for unsuitable advice, and an unquestioning media, all serve to perpetuate the mistaken belief that risk tolerance is unstable.

Let us now turn to the evidence that risk tolerance is, in fact, stable, starting with an introductory look at raw data.

### Evidence for the Stability of Risk Tolerance

Financial advisors have been using FinaMetrica's psychometric risk tolerance test with clients since 1999. Our test scores on a 0 to 100 scale - mean 50 and standard deviation 10, and approximately 500,000 tests have been completed to date. We have periodically published monthly average risk tolerance scores which are, in effect, new samples from the same population. Average monthly scores from 1999 to 2011 are shown in the chart below.

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The data is drawn from predominantly Australia, the US and the UK, with the start dates for data collection being respectively 1999, 2002 and 2004. Because Australians are more risk tolerant than Americans who are more risk tolerant than the British, the change in the composition of the data over the period would suggest that average scores should fall slightly, as they do. In the early years the number of tests completed per month was quite small whereas now it runs to around 5000.

The stability we saw in the monthly data was reinforced by anecdotal feedback from our subscribers about the stability of retest results on individual clients. (We recommend that clients be retested as a matter of course every two or three years and also after any major life event.)

Of the formal studies, the first test/retest study comes from 2000. Ulla Yip, a psychology Masters student at the University of New South Wales, conducted a study of Finance students who were participating, as part of their course work, in a funds management game based on live stock market data over an eight-week period. Their risk tolerance was tested before, during and after the eight weeks. The findings were “The increase in financial experience and knowledge, as well as the occurrence of a major stock market crash during the trading period did not appear to affect the stability of risk tolerance. .... It was concluded that financial risk tolerance is better considered as a trait and not a state.”

In a longitudinal study which compared risk tolerance scores with a consumer confidence index from 1999 to 2007, Santa Cruz (2009) found “According to the results obtained using the FinaMetrica dataset, the risk tolerance of Australian investors (as measured by RTS) does not appear to be affected by the general economic mood (as measured by CSI).”

In a test/retest study of financial planning students at Texas Tech University, Roszkowski and Cordell (2009) found “The relative stability of financial risk tolerance is comparable to other traits, suggesting that it is not as transitory as some have thought it to be.”

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In a longitudinal study of Australian investors from 2002 to 2006, van de Venter, Michayluk & Davey (2012) found that "... changes in financial risk tolerance are normally distributed with a small average one-year change of 0.29 points, a median of zero and a standard deviation of 5.80. This minimal change supports the theory of Hanna and Chen (1997) that financial risk tolerance is a genetic and predispositional stable personality trait and as such is highly unlikely to fluctuate over the life of an individual."

In a test/retest study where the first test was conducted in the 2003 to 2007 bull market and the second test in the ensuing bear market, Roszkowski & Davey (2010) found, "Our data suggest that risk tolerance appears relatively stable and was not drastically affected by the economic circumstances of 2008. However, there was clearly a change in people's risk perception, as indicted by their self-assessments."

The most recent paper is from a more detailed analysis of the same test/retest data in which Gerrans, Faff & Hartnett found, "In absolute terms the change in risk tolerance is low and contrasts with a prevailing view that risk tolerance is an elastic psychological state overly influenced by the pervading market conditions."

**So, there are now six studies, four of which are based on large heterogeneous samples, covering more than a decade, all of which point to risk tolerance being a stable psychological trait.**

## Consequences for Financial Advice

This is good news for advisors. Advisor and client share a common interest: neither wants the relationship to end in disappointment, and both want to reduce the potential for abrupt reversals. If the client's risk tolerance collapsed in a bear market there would be little the advisor could do to prevent a panicked sale. However, if increased risk perception is the likely Achilles heel, then the advisor can influence the client's risk perception through education about market risk.

Clearly, risk tolerance is one of the few aspects of an individual's life that is unlikely to change over time<sup>1</sup>, which makes it a solid foundation for conversations about risk generally, and portfolio risk in particular.

Those who believed that risk tolerance was unstable will, at least, have to rethink their views. Understandably, advisors who thought risk tolerance was unstable often paid scant attention to risk tolerance because of this. For them, assessing risk tolerance was simply a box to be ticked for compliance purposes before moving on to the real business of advice. Now, however, they will need to consider a new approach to risk tolerance.

It should be clear to those whose risk tolerance questionnaires showed risk tolerance going up and down with markets that these questionnaires were measuring something other than risk tolerance. They should now consider switching to a methodology which can demonstrate stable measurement. Having done so, they may then wish to review advice given previously. Misreading risk tolerance won't necessarily have led to bad advice but it may have and this can now be corrected.

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<sup>1</sup> There is evidence that risk tolerance decreases slowly with age and that, like other aspects of personality, can change as a result of major life events.

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