

On Risk Tolerance

Saving Cash in Your Mattress, or Investing With a Robot.



Dear Reader,

Thank you for taking the time to read about our insights through *Perspectives*. Before you continue reading, I would like to offer a small disclaimer: If you are looking for a broad list of statistics related to investment performance, a slew of research credentials, or a how-to guide of some sort, you will be disappointed. The insights that we present within this paper are not heavily researched, or supported by more than our personal experiences and related observations. Through the process of composing these commentaries, we have learned a great deal about the subject. Our intention is to be successful in adding some measure of value to your own views and hopefully allow you to see the subject a little differently than you did before.

We are always open to feedback and discussion and welcome all questions, comments, or rebuttals. We can be reached by telephone at 905.764.5465 or via email through contact@millstreetco.com.

A handwritten signature in black ink, appearing to read 'Noah Murad', is written in a cursive style.

Noah Murad
CEO



Assessing our own financial risk tolerance is extremely difficult to do. We will define risk tolerance in this paper as the maximum amount of uncertainty that an individual is willing to accept when making a financial decision.¹

The risk tolerance of an individual is specifically different from one person to the next, and even one moment to the next.

It not only requires an understanding of our own personal financial picture, but also a deeper understanding of our own psychology. At the very least, we need to have the ability to predict how we will behave in the future, based on the forecasted outcomes of certain investment scenarios. We also need to be able to vaguely predict how our financial and personal circumstances will change over time, whether this is something as simple as a career change and its effect on income, or having children.

If one randomly selected 10 individuals, each one would have different financial resources and unique assessments of how their financial paradigm will change over the next period in their lives. These would not be minute differences. They would be large, critical differences that would require that the outcomes for each investment decision be weighed with fundamental differences in probability, depending on the individual. In other words, the risk tolerance of an individual is specifically different from one person to the next, and even *one moment to the next*.

This idea should not appear to be a profound concept to anyone who has thought about risk tolerance. Yet, over the last few decades, as investing has opened up to the mass population, assessing risk tolerance has become more generalized to the point that institutions have online questionnaires to immediately assess something the *market* calls 'Risk Tolerance'. It seems that this version is vastly different than the version described above. It is a far more vague definition that applies general macroeconomic stereotypes to profile an individual investor.

From a starting point as abstract as personal risk tolerance, the questionnaire takes an individual to a definitive target return on investment. Whether with a human or robo-advisor, something is taking place between the time the questions in the questionnaire are answered and the solution is provided. What is happening, I believe, is that the answers to the questions work as an

¹ I have read several papers on risk tolerance and this was the most concise definition that I came across. The author is John E. Grable. The journal: *Financial Risk Tolerance and Additional Factors that Affect Risk Taking in Everyday Money Matters*



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efficient means to process the individual investor into more generalized funnels, or risk profile 'buckets'. While this allows the institution to operate efficiently and increase its customer base, I believe it is appropriate to question the relevance of this process to the individual investor over the long term.

The Democratization of Investment

Over the past two centuries, our society has made huge strides in making investments available to the mass population. Historically, only certain classes of people were even allowed to own land or lend money. In ancient Rome members of parliament and other heirs owned the land and hired managers to take care of the day-to-day. Slowly, these managers began to gain respect amongst the higher classes. Cicero, for example, had this relationship with Atticus. It is known that Atticus was not of the same class as Cicero, but through his letters, Cicero shows Atticus a great deal of respect, which historians attributed to his ability to manage his assets. Similar relationships have also been cited within wealthier families in the Middle East.

Land, or property owners up until the 1600's (and to a lesser extent to this day), typically had lower economic classes managing their assets. Though there was always some respect and trust shown to this class for handling these issues, it was understood that the lower classes couldn't own property (the main form of capital) because it was passed down from generation to generation.

The merchants who grew out of the increased production from the 1600's to the 1800's, as well as the first and second industrial revolutions, transferred a portion of wealth to a second group of people, who we refer to today as the upper class, or upper/middle class. As well, banks began to extend credit to merchants and business owners, who were then able to buy more stock and expand their businesses.²

Only after this massive credit expansion and the creation of the public stock exchanges in the 1800's, did businesses have a methodology to actually raise capital from individuals. More importantly, it was only after this point in history where individuals could invest in shares, or bonds of companies in a large way.

² I realize that I have done no justice to the historical details here. I have skipped over massively important events and other facts. I do not want to deviate from the point I am trying to make too heavily, so if this subject is of interest, please start with this book: *Investment, A History by Reamer and Downing*



The concept of investing in the public market to diversify risk and grow a retirement fund, or wealth generally speaking, is still very new.

The more our society expanded, the more credit was provided, which increased productivity and ultimately expanded the amount of individuals who could invest in these markets.

I have gone through this digression to show that, although it seems common today, the concept of investing in the public market to diversify risk and grow a retirement fund, or wealth generally speaking, is still very new. For example, in the early 50's only 4% of the entire American population owned stock. This number increased to one in every two individuals by the year 2000. To understand this in terms of the amount of people, this is an increase from approximately six million people, to over 200 million in just half a century. About 64% of these people were indirect owners of the stock, meaning that well over half of the people who owned stock did so through an asset management vehicle of some sort. Again, this is just the US, and only relates to stocks. I have not read anything in detail about bonds or other instruments. However, I would imagine that a good portion of the population in the US and Canada had their dollars invested in some kind of fund, or asset manager by the year 2010. Though we see this as commonplace today, we are in reality only a few generations removed from keeping stashes of cash in our homes as our 'savings plan'.

The Institutional Model

The next question becomes how to process the increase in investors. The Asset Manager's model, whether this is a traditional mutual fund, or a new Robo Fund, relies on increasing its assets under management (i.e. the amount of dollars it takes in from investors). This is because they generate income through a fee that is calculated as a percentage of these invested dollars. Even if the fee is based on success to a degree, a basic management fee has always been a part of the business to cover overhead and other costs. Fundamentally, asset managers are incentivized to increase the amount of customers, or assets that they have under management.

While the fees are increasing as more capital flows in, the administrative burden increases as well. This is required to process the client information, investment needs, and so forth. Rather than having, for example, 10 million different clients



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with customized investment portfolios based on their actual needs, it is easier to group them in some way. Here are some of the ways that individuals may be grouped:³

<i>Ethnicities:</i>	Immigrant families are more likely to be lower income/lower net worth.
<i>Married:</i>	More likely to need liquidity and, therefore, have lower risk tolerance.
<i>Age:</i>	The younger you are, the more risk you can tolerate.
<i>Low to high income:</i>	Higher income can allow for more risk, since there is replacement income that is now more readily available.
<i>Gender:</i>	<i>Male</i> = higher risk tolerance <i>Female</i> = lower risk tolerance
<i>Tolerance for Market Volatility:</i>	<i>High tolerance</i> = you will not sell in a panic during a market decline and therefore have a higher risk tolerance. <i>Low Tolerance</i> = You will sell in a panic during the decline and therefore have a low risk tolerance.

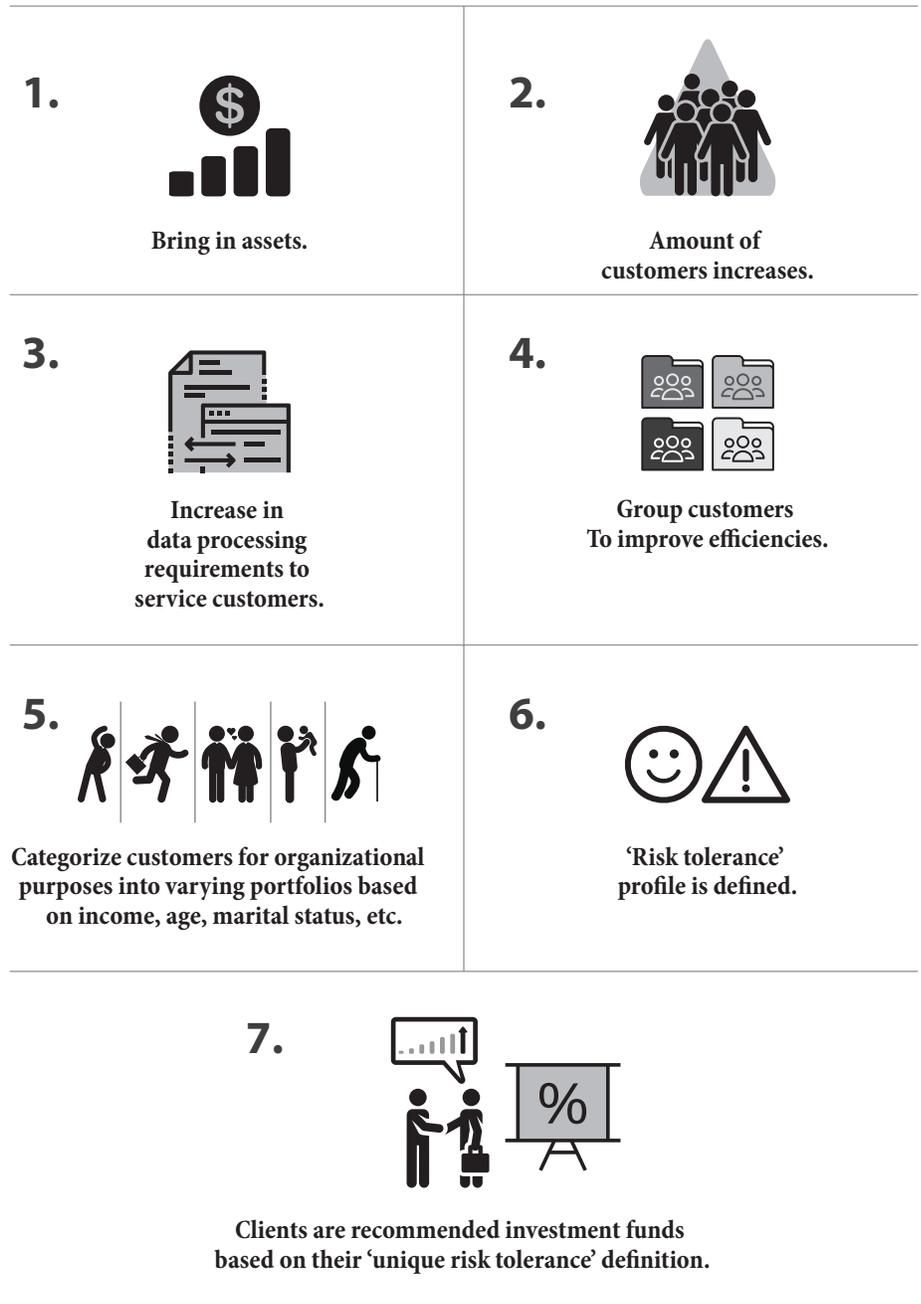
³ The chart was taken from an amalgamation of research papers that I have read, which explained how financial advisors attempt to assess risk tolerance. There are certainly many more categories, but these types of categories are supported by even more research that shows that people tend to have similar financial circumstances based on these stereotypes. Please contact us if you are interested in the papers.



DRIVING GROWTH THROUGH SMART CAPITAL

Accordingly, a visualization of the related organizational workflow could look something like the following flowchart:

Clients are recommended investment funds based on their 'unique risk tolerance' definition.





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At this stage, I would like to point out that I do not mean to discuss the validity of the risk tolerance model. I am simply providing my perception of a model that is being used to process a market, including millions of customers, that has grown exponentially over the past 60 years.⁴

With this background now established, we can examine various thoughts on the relevance and practical aspects of risk tolerance assessments being conducted daily within the current marketplace. I will explore this through a series of arguments set against different aspects of the same risk tolerance strategy being applied to individual investors.

Time as it Relates to Risk

It is impossible to go through a subject such as this without discussing particular time horizons. One can argue that the entire practice of investing is about trying to earn investment gains in a particular window of time. This is a very complex topic, but I believe two general viewpoints captures the overall crux of the relationship.

First, the terms of the security itself and how long the investor can have their money invested in the particular security before needing to sell. For example, if a day trader buys stock on margin (or with leverage), he will have to assess, on *that same day*, what the consequences for his equity will be if there is a drastic change in the price of his stock. In this case, there is a high degree of uncertainty, because he cannot predict what the price will be and he only has a very limited time before he realizes a gain, or a loss.

Another example is in traditional private equity, or buyout firms, who are typically required to sell their businesses in five to seven years in order to create liquidity for their investors. Compared to the day trader, there is far less uncertainty in the investment, because there is a substantial period of time to correct short-term errors.

⁴ Some funds are considered 'funds of funds.' For example a pension fund (which is already a fund consisting of pooled capital) will invest their money in another mutual fund who invests in the broader market. In this case, the pension fund which deals directly with the individual has to make the same general assumptions about the risk tolerance of its investors, but have additional considerations and goals that are beyond the scope of the subject here.



If you invest in a low-cost index fund, as the great majority of people are doing today, you will also see results that closely mirror the index, less a few percent for fees and taxes.

There are countless other examples which come to mind, but as a rule of thumb, the shorter the time one has before they need to liquidate the investment, the more uncertainty is involved in the financial decision.

Second, as time passes, there are personal changes that can occur, which can alter the circumstances under which a financial decision was made in the first place. For example, an individual invests \$10,000 in stocks only to find out that he has been let go from his job. Therefore, he will either need the capital, or will need to invest in a high income producing security that generates returns to help supplement his salary. This individual would have assessed his risk tolerance differently had he known he would be losing his job before making the investment. Another example involves a married couple who decide to get a divorce. Investment decisions would then have to be completely re-evaluated. This may also lead to a sudden and unforeseen need to liquidate investments.

Obviously this is a complex subject, but the arguments below do not pertain to those people who are in the business of turning investment dollars many times throughout their lives. The following discussion relates to those who we would consider to be passive investors and are generally clients of financial institutions, consumers of their mutual funds and other investment products. These are people with an investment horizon that spans several decades, negating short-term uncertainty.

A Quick Argument on the Obscurity Surrounding Standard Market Assessments of Risk Tolerance

Today, it is generally accepted that most active fund managers do not beat their benchmark indices over time.⁵ To illustrate this point, if you take the time to view some of the largest actively managed funds in Canada, you will scarcely see one that beats their benchmark over a period of ten years. Usually, the results closely mirror the benchmark indices, but don't exceed them.

If you invest in a low-cost index fund, as the great majority of people are doing today, you will also see results that closely mirror the index, less a few percent for fees and taxes. In most scenarios that one can imagine, the assessment of risk

⁵ Read 'Common Sense Investing' by John Bogle and you will be able to look at pages of data that prove this point.



If you plan to invest in an index or mutual fund that is diversified across hundreds of securities for the next 40-50 years in order to benefit from market growth during this time frame, this plan will not be successful if you prematurely sell your position in that fund.

tolerance completed by financial institutions and large funds leads to roughly the same result: a return that is slightly lower, or slightly higher than the benchmark index that the fund is trying to beat.

If this is the case, one has to wonder exactly what difference it makes whether you have a high, or low risk tolerance based on these institutional risk assessments. Your results will be roughly the same either way, whether you are an immigrant male with a high income, or a third generation Canadian female with a low income.

Volatility, and its Irrelevance to the Institutional Model

At some point during the emergence of the Capital Asset Pricing Model, the 'Beta' of a given market security (the measurement of a marketable security's tendency to fluctuate relative to the rest of the market) became almost interchangeable with the investment risk concept. It would be less risky, the theory says, to own a stock that increases its price every year for 50 years without ever having a price decline. Or, in the case of an income producing asset, the security should pay the same interest coupon consistently every year with no change.

The second school of thought, and one that seems to be more rational, is held by another group of more traditional investors – that market volatility, or price fluctuations in a security have nothing to do with what you purchase. If anything, they say, volatility in securities *creates opportunity*, because buying mis-priced securities successfully is where one makes money in investing. Price fluctuations allow for those slight errors in the price of the security. Therefore, investors can actually *ignore volatility* completely unless it presents them with a good buying opportunity.

I do not want to go into further detail on the debate between these two schools of thought.⁶ However, as it relates to investing in index funds and other institutional funds, the following argument cannot be overlooked: If you plan to invest in an index or mutual fund that is diversified across hundreds of securities for the next 40-50 years in order to benefit from market growth during this time frame, this plan will not be successful if you prematurely sell your position in that fund.

⁶ I do believe in the second school of thought. But in either case, one can easily argue that it always pays to avoid looking at stock prices, or your portfolio performance on a regular basis. This avoids making impulse selling decisions which will have negative results.



Though the market may be unforgiving in that it will 'punish you' over the long term for withdrawing funds, it seems that more than anything, this shows the limitations of the low-cost indexing strategy.

This is because: 1) you will pay additional trading fees which will eat into your returns; 2) you will pay additional taxes on any gains you made that will have the same effect; and 3) you will slow down the effect of the compounding of the money you have invested, which will surely result in less money being generated within your retirement fund at the end of the day.

On the other hand, consider someone who does not sell and continues to add capital to their portfolio over the course of several decades. History has shown that they will see significant investment gains generated over this extended period of time.

Since you do not intend on selling your position for the duration of the investment, assessing your tolerance for market volatility is irrelevant. Put another way, whether you believe in "Beta" being a useful figure, or not, it pays to ignore market volatility if your plan is to mirror a benchmark index for 40-50 years. This is even true for a 20-30 year period, if the market does well enough during that time to meet your goals.

The next question then becomes why an advisor (or a robot) would ask potential clients about their tolerance for market volatility. Any answer I would give in this case is pure speculation. What I can say, is that this is likely because advisors understand that it is hard to hold onto a position for 40 years and it is likely that clients will want to "do something" if they are not happy about the market performance. In this case recommending a less volatile fund to a client would likely result in the client holding the position. This result is better for both the client and the asset manager. Accordingly, in this case, what is being measured is not tolerance for market risk, but rather a speculative assumption on the likelihood that a client will sell during a market downturn at some point in the future. Put another way, the advisor is trying to find a fund portfolio that will be the least bothersome for the client psychologically, while still returning something acceptable. This way, the client will keep the assets within the fund, which of course is better for both the advisor and the client.

There is a caveat to this, where one has some kind of paradigm shift in their life and suddenly needs the capital that they previously thought could be left invested. It seems to me that this scenario has the probability to occur often. Though the market may be unforgiving in that it will 'punish you' over the long term for withdrawing funds, it seems that more than anything, this shows the limitations



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of the low-cost indexing strategy. It lacks flexibility to adapt to real life changes. Even though this is often explained to us as our capacity to tolerate risk, the reality is that there are two sides to the relationship. The advisor, or institution should factor into the strategy an ability to adapt to the volatility of life, as well as the markets.⁷

Average Returns in Relation to Risk and Reward

All too commonly, people confuse the concept of average, with median, as Nassim Nicholas Taleb so simply explains in *Fooled by Randomness*. If a group of 10 people have an average income of \$100,000, we tend to think, in this example, that each person has an income of \$100,000. This is a psychological misjudgment. It is also possible that in a group of 10 people, each person makes \$25,000 and one person makes \$775,000. The average amongst the 10 people will still be \$100,000, but 9 people will have an income below average and one person will have an income above average.

We tend to make this error in two ways when we consider investing in the public markets, or when discussing investing options with advisors. First, we believe that a benchmark, such as the S&P 500, *represents* the average, which is incorrect. The average market return can never actually be known if you think about what that really means. It would mean tallying the true results of every single individual (including off-shore investments and other non-reported investments) and dividing it by the initial investment dollars. It would also mean including the returns of *all types* of investments, including venture capital and private equity funds, which both perform independently of the public market.⁸ This is a critical point. Second, we tend to think that the benchmark we choose is something that we can easily achieve, or something we will probably achieve, the same way we believe that we would probably make \$100,000 in average income in the example above. If one recalls those university brochures which explain that the average income of their graduates is 'X', they lead you to think that if you attend that

⁷ Many advisors do. In fact, they are over-conservative in the strategies. But again, if you are protected against these sort of financial changes to your life then you should never need to sell your position in the institution, and therefore, again, this renders market volatility irrelevant.

⁸ These types of alternatives rarely even use ROI as a calculation of their effectiveness. PE firms for example use IRR when advertising to the public, which is different than ROI.



More likely, based on today's discrepancy between the wealthy and the poor, more people are actually earning below the true average.

university you will also make 'X' income. The truth may reveal that the entire average was derived because one student graduated and made 100X and raised the stated average. But, our minds don't automatically think that way.

Now, back to the point about average returns. If most dollars invested globally achieved results that closely mirror the benchmark index that the fund uses, then the only way the investment results of these funds could represent the true average is if the non-indexing investors are earning similar returns, while not varying too much from the index. If the distribution of global returns closely mirrored each other without deviating by more than a few percentage points, then there could be a possibility that these benchmarks somewhat reflected an approximate average. But this would only be a short period of time. Intuitively, we can figure that if most people in the world decided that this return was "the best that we could do," then the thousands of new customers flooding into these funds every year would reduce investment results to the point where the investment manager could no longer both charge a fee and earn a profit for investors. This would drive new entrants to the investment market looking for higher returns anyway. In reality, investment results are necessarily far more wide ranging.

What is more likely, based on today's discrepancy between the wealthy and the poor, the majority of people are actually earning below the true average. Smaller amounts of companies and investors are likely earning far above the average, and another group is probably earning somewhere around the true average, yet this is still way above what the majority of people are earning.⁹ Like the income example above, the true average is likely well above the market benchmarks, because they are dragged up by the wealthier investors.

What this means is that while we have certain expectations about what we 'should' be making when investing in these types of programs, the starting point of the risk and reward model being used is not founded on the basis of "what is really going on." It is not really possible to do so. Therefore, any plan presented by an institution to an individual investor is skewed towards results that are more possible to achieve for the asset manager than it is towards a real assessment of the true risk to the client in the investment.

⁹ I have no way to prove this, it is common knowledge that the wealthiest people in the world enjoy the largest investment gains, which necessarily would make the benchmark indices a below average result.



Long-term success has more to do with one's own plans to add to their invested capital and ensure that they do not sell their position.

The average passive investor is never exposed to a wide enough spectrum of risk and corresponding rewards. The great majority of people are only shown a benchmark index and told that the potential returns are low, or high-risk, relative to the behaviour of other market benchmarks and other published research at the time.

Much like thinking about a subject as simple as average returns, if one even spent a few moments thinking about the *unpublished* investment records and other research done, but never given to a mainstream audience, it would vastly change your perception of the typical risk-reward paradigm people are investing in.

What is so Bad About Having Returns Which Mirror an Index?

All of this begs the question of whether or not mirroring something like the S&P 500 is such a bad thing. The answer is no, it's not a bad investment strategy. One can do extremely well if they invest in a low-cost index fund, add to it over the years, and hold onto it for many decades. By cutting down on trading, taxes and management fees, an individual can keep up to 25%-30% more of their capital over their investment lifetime.

However, this Index strategy has little to do with risk tolerance, as it relates to how the market would assess and profile you. Long-term success has more to do with one's own plans to add to their invested capital and ensure that they do not sell their position. The institution is just a distribution point for your capital.

Real Risk Tolerance is Personal Untapped Knowledge

You will recall the original definition of financial risk tolerance stated at the start of this paper to be: The maximum amount of uncertainty that an individual is willing to accept when making a financial decision.

T.S. Eliot said that only those who will risk going too far can possibly find out how far they can go. It seems to me that this is the case when trying to discover our own risk tolerance, or the maximum amount of uncertainty we are willing to accept. In other words there is a practical aspect to this discovery, and the more experiences we have, the more we can adapt our tolerance to financial risk. It seems that the subject is broader in scope than simply asking you what you would do if the market went down, or how old you are, for example.



For those who are not interested in discovering their own risk tolerance, it is equally beneficial to understand that generalized profiles are not really a reflection of your individual risk tolerance but rather what we are being told our tolerance should be given the factors being assessed by an institution in a vacuum.