

THE INFLUENCE OF THE SOUTH AFRICAN MARKET PHASES ON INDIVIDUAL RISK PROFILING

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Abstract

This study involves an investigation into the act of risk profiling, and whether or not it will differ during different market trends. The literature review involves an in-depth discussion about risk tolerance and what factors determine it, as well as behavioural finance, bull and bear market phases, strategic asset allocation, and the duty of a diligent financial advisor to his or her clients. In order to conduct the investigation, 210 respondents under the age of 33 years filled out actual risk profile questionnaires, each having one of three market conditions simulated: bear market conditions, bull market conditions, or no market conditions (current market conditions assumed). These three different simulated market conditions form the three groups which were to be compared to each other. Each respondent was categorised based on the type of investor he or she was deemed to be: conservative, moderately conservative, moderate, moderately aggressive, or aggressive. The three groups were then tested using a paired samples T test for statistically significant differences between their means. At a 5% level of significance, the evidence showed that there was not a statistically significant difference between risk profiling during a bull market and risk profiling during a bear market, which resulted in failure to reject the null hypothesis.

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1. Introduction

Risk profiling is the act of assessing an individual's risk tolerance. Risk tolerance can be defined as the willingness of an investor to accept a certain amount of risk in order to achieve certain expected returns (Bodie, Kane & Marcus, 2008). Risk tolerance can be measured by examining numerous factors unique to each investor. These can include an individual's current net worth, income expectations, insurance coverage, family situation, age, psychological makeup and much more. An investor's risk profile will determine the vital strategic asset allocation of his or her portfolio. Strategic asset allocation is the process of distributing an investor's funds among the different asset classes for investment purposes over the long term (Reilly & Brown, 2006). Strategic asset allocation is regarded as the most important decision in the portfolio management process, as research shows that 90-95% of the variance in portfolio returns can be explained by the asset allocation decision (Maginn, Tuttle, McLeavey & Pinto, 2007).

Investor behaviour and choices (as well as everyday decisions) are greatly affected by psychological factors, which have led to much enquiry regarding the discipline of behavioural finance. Reilly & Brown (2006), define behavioural finance as "models of financial markets that emphasize potential implications of psychological factors affecting investor behaviour." As risk tolerance is one of the underlying factors of investor behaviour, it is fair to say that, according to Reilly and Browns' (2006) definition of behavioural finance, risk tolerance will be affected by psychological factors. Given this background, the reason for conducting this research is to determine whether financial advisory firms, and more specifically portfolio managers, are being rigorous enough in their risk profiling of clients, in the sense that the psychological state and characteristics of their clients are taken into account before making strategic asset allocation decisions. The investigation will explore whether portfolio managers are devoting ample time and consideration to the emotions and psychological traits of each unique investor when deciding on risk profiles. These psychological factors in turn will be impinged on by international and domestic current events, as well as the present market trend, happenings which are ongoing and are unpredictable.

Global financial markets are ever-changing, and this affects the actions investors choose to take regarding their investment strategies. There is also concern that financial advisory firms and portfolio managers are not updating their clients' risk profiles frequently enough to keep up with these market changes. Hence, clients' portfolios are not being timeously adjusted to match what would be the risk-return preferences of an informed investor during different market trends. This matter should be addressed, because when portfolio managers deal with

an investor's assets, an adequate amount of deliberation should be committed to being absolutely certain about the risk tolerance and objectives of the client. In addition, financial advisors should ensure that the client is well informed and has a clear understanding about the relevant strategy that will be used, if anything, to avoid a potential dispute at a later stage.

Specifically, the difference between risk profiling during a bull market and a bear market will be the crux of this investigation. A "bull market" is one in which prices are increasing, and a "bear market" is one in which prices are decreasing. These bull and bear markets are two examples of the different directions that the ever-changing market can take, and the primary objective will be to determine whether there is a statistically significant difference between risk profiling during these two different market phases. These two market phases will expectantly result in differing investor sentiment during each, and so the psychological state of investors during each trend will likely be different too. This in turn will lead to different risk profile results and ultimately to different strategic asset allocation decisions. It is therefore of critical importance that portfolio managers take these psychological factors into enough consideration when assessing an individual's risk tolerance. The popular risk profile questionnaire, which is widely used to determine risk tolerance, will be scrutinised, and the factors being considered when shaping a client's risk profile will be determined.

The present study is organised as follows: A literature study focusing on risk profiling, asset allocation, behavioural finance and market phases is discussed in section two, followed by a discussion of the data and methodology in section three. The results are discussed in section four, followed by recommendations on future research in section five. Finally the study is summarised in section six.

2. Literature Study

2.1 Risk Profiling

Risk profiling is used in order to determine a client's tolerance of risk (Nevins, 2004). It is usually determined by assessing an investor's attitude towards risk, or their risk-taking behaviour. In the financial world, there are many types of risk, and before a portfolio manager can advise a client on their relevant investment recommendation, this important risk profile needs to be determined.

In order to carry out proper risk profiling, some form of questioning or investigation into the client's goals and preferences must be carried out. This can be in either a verbal form or a questionnaire form, but most financial advisors tend to use both (Nevins, 2004). If advisors were to rely merely on the verbal form of questioning, this could result in misinterpretations and inefficient asset allocation

(refer to section 4) on the part of the financial advisor. This is because it is often difficult for clients to adequately describe their attitudes towards risk using their own words. According to Callan and Johnson (2002, in Nevins, 2004), when meeting with a financial advisor for the first time, clients may not always have a clear understanding of the financial world and the risks that their financial circumstances allow them to take. Callan and Johnson also therefore state that risk profiling requires a scientifically developed form of risk tolerance measurement, culminating in the questionnaire method that is so commonly used.

Judging by a number of questionnaires that have been consulted, the questionnaire used is a relatively simple one, seldom more than about ten questions. The client generally fills it out quickly, and the financial advisor tends to assist from time to time (Davey & Resnik, 2008). There is some debate about how accurately these questionnaires provide risk tolerance estimates. A study performed by Yook and Everett (2003) involved MBA students filling out six different questionnaires each. The results found were that most of these questionnaires provided a different risk tolerance description to the others. There appeared to be a low correlation between the results of the questionnaires, and this resulted in the conclusion that not all of them could be correct. This experiment, along with other personal opinions in the financial world, fuel controversy about the effectiveness of risk profiling and one wonders whether this method alone is rigorous enough.

Once the questionnaire phase is completed, and the client's investor goals and circumstances have been established, a specific risk profile is assigned to the individual. This describes the type of investor the client would be, and it is generally categorised into five risk tolerance categories: aggressive (high risk tolerance); moderately aggressive; moderate; moderately conservative; and conservative (low risk tolerance). The type of investor a client is deemed to be in terms of his or her risk profile, is a vital input in the strategic asset allocation process.

The risk tolerance of investors is affected by a number of different factors. Studies have shown that risk tolerance has a positive correlation with wealth, income and education, but correlates negatively with things such as marriage and number of dependants (Davey & Resnik, 2008). There are however many more factors which influence risk tolerance, including age, the current market phase (most applicable for the purposes of this study), and certain psychological factors. The psychological part of risk profiling is one which is often overlooked by financial advisors, as evidence found by Davey and Resnik (2008) suggests that they have not been trained to link the client's psychological profile to their financial risk profile. This brings the discussion back to the topic of behavioural finance (refer to section 2.2).

There is debate as to whether risk tolerance is something that can be quantitatively measured at all (Davey & Resnik, 2008). Nevertheless, for the purposes of this study it will be assumed that risk tolerance is a variable that can be measured, but there is question as to whether the current manners in which it is being measured are rigorous and timeous enough to meet the needs of emotional investors in an ever-changing market place.

2.2 Behavioural Finance

"Psychologists have been concerned with risk tolerance for more than 50 years ... Unfortunately very little of this [psychological] knowledge has made its way into the financial services industry. 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" (Davey & Resnik, 2008). This quotation supports the opinion that there is a gap in the financial services industry when it comes to financial risk profiling, as advisors are not taking investors' psychological qualities into account. Psychologists are of the opinion that an individual's risk tolerance is by and large a trait, and it will differ from one person to another. This is important for the purposes of this study: the question of whether or not portfolio managers are taking the significant psychology of their clients into account when performing risk profiling rears its head once more.

Behavioural finance is a relatively new branch of financial economics, which came about in the 1990s (Reilly & Brown, 2006). It takes into consideration how various psychological qualities affect the actions investors, analysts and portfolio managers take, individually as well as in groups. According to Olsen (cited in Reilly & Brown, 2006), proponents of behavioural finance assert that the traditional finance model (that which assumes rational behaviour of investors as well as profit maximisation) is true only within certain limitations. Behavioural finance supporters believe this model is only fragmentary, because it does not take into account individual behaviour and psychology.

As noted by Godoi, Marcon & Barbosa da Silva (2005), "people behaviour is susceptible to cognitive and emotional mistakes and, thus, not always compatible with the most proper direction of earning money." This suggests that financial advisors and portfolio managers, those to whom the clients are entrusting their money, need to consider their clients' emotional and psychological positions when deciding which risk profile to assign to the individual. Therefore, the matter of behavioural finance should be prevalent in the minds of financial advisors and portfolio managers when they are constructing a client's risk profile.

Up until now, there has not been one generally accepted and cohesive theory of behavioural finance, but the focus of most studies has been placed on identifying portfolio discrepancies which can be explained by the different psychological traits of individuals in the investing world (Reilly & Brown, 2006). These discrepancies in portfolio performance can be explained by a number of theories or biases which have been formulated. "Prospect theory", for instance, has to do with how investors tend to hold on to "losers" too long and sell "winners" too soon. This theory was formulated by Scott, Stumpp, and Xu (1999, in Reilly & Brown, 2006), and states that investors fear losses more than they value their gains. Another bias is that of "overconfidence", as identified by Shefrin and Statman (1996, in Reilly & Brown, 2006). It is apparent that in growth companies, this overconfidence in analysts causes them to overestimate growth rates for stocks. They also overemphasise good news which supports their views and tend to ignore the negative news which is contrary to their opinions. Another name for this bias is "confirmation bias". One must also not forget the effect of "noise traders" on the market. Whenever there is a shift in investor sentiment in the market, these noise traders are those who tend to all move together, and follow newsletter writers, in other words they "follow the herd" (Reilly & Brown, 2006). These noise traders are almost always wrong, and this affects the market volatility. Lastly, another bias which was identified by Shefrin (2001, in Reilly & Brown, 2006) is that of "escalation bias". This bias "causes investors to put more money into a loss that they feel responsible for rather than into a success" (Reilly & Brown, 2006). Investors find it difficult to seriously look for the bad news, to accept it as well as their losses, sell the stock, and move on. These are just some of the many explanations found for the behaviour of humans in the finance world.

2.3 Asset Allocation

After a client's investment policy statement (IPS) has been set up by the financial advisor, the next logical step is to advise the client on his or her asset recommendation. The IPS is defined as a document that links the investment objectives of the investor with the types of strategies that the financial manager will use to reach these objectives (Fabozzi, 2007). The relevant risk profile of the individual that has now been determined during the process of setting up the IPS will provide a framework for the strategic asset allocation within the client's portfolio. Strategic asset allocation is one that sticks to a "constant-mix" (Reilly & Brown, 2006). This involves using a proportionally weighted combination of assets based on the relevant expected return for each asset class, in order to achieve an overall required return for the portfolio. This strategy is a long-term approach, and the values of the securities in your portfolio will

change with the market over this time. Therefore, periodic rebalancing of the portfolio as the values change may be required, so that the initial specified asset weights can be maintained (Reilly & Brown, 2006).

Portfolio managers should strive to achieve a balance between risk and reward when allocating assets in a portfolio. The assets should be apportioned according to the individual client's IPS, which will include their goals, risk tolerance and investment horizon (this is the planned liquidation date, or the time within which investors will need to receive their return from their investments (Bodie, Kane & Marcus 2008)). The asset allocation decision is of critical importance, as 90-95% of the variance in a portfolio can be explained by the relevant asset allocation that is implemented (Maginn, Tuttle, McLeavey & Pinto, 2007).

The client's funds can be allocated across five main asset classes when constructing a portfolio: stocks or equities; fixed income securities or bonds; cash and cash equivalents; real estate or other tangible assets; and alternative investments (this includes real estate, private equity, commodities, natural resources, hedge funds and currencies (Maginn, Tuttle, McLeavey & Pinto, 2007)). These assets have been divided into their relevant classes because they will exhibit similar characteristics and behaviour in the market place. They will also be subject to the same laws and regulations, and the division of them into classes allows investors to apply their relevant risk profiles accordingly.

Tactical asset allocation is more of a short-term approach. The portfolio manager may partake in short-term, tactical digressions from the strategic asset allocation in order to take advantage of sudden investment opportunities in the market. This strategy can be described as moderately active, as the initial strategic asset mix is returned to once the short-term profits have been achieved (Van Bergen, 2009).

Hand-in-hand with asset allocation comes diversification. Diversification is a technique used to manage risk. It seeks to minimise unsystematic risk by dispersing funds across a range of asset classes. Unsystematic risk refers to that risk which is unique to any single asset. It can be offset by the unique variability of all the other assets in the portfolio (Reilly & Brown, 2006). Diversification is important so that the fluctuations of a single security will have less of an impact on the overall return of the portfolio than it would otherwise have had should the portfolio consist of only that particular security. The different asset classes will generally not behave in the same manner in the market due to each class having its own unique characteristics. Market conditions that cause one asset class to prosper may cause another to dwindle. This means that by investing in more than one asset class, investors are reducing their risk of losing money, and the total portfolio return will be less volatile.

Asset allocation is generally performed by means of an asset allocation model. Each model is designed to reflect the personal goals, constraints, and risk tolerance of the particular investor. They are tailored to meet the needs of the specific investor in accordance with his or her assigned risk tolerance category. The models generally fall into one of four objectives: preservation of capital; income; balanced; and growth (Kennon, 2001).

Models falling under the first type, preservation of capital, are generally for investors who will need to access their cash within the next twelve months. They do not wish to lose any money at all, and want relatively liquid investments. This is because investors who need this type of asset allocation may need to pay for something of importance and of an economically large amount, such as college, a house or even a business. This model involves investing in low-risk cash and cash equivalents such as money market instruments, commercial paper and treasuries. These investment vehicles will comprise approximately 80% of the total portfolio's value. However, with the low risk comes a potentially low return, and there is a danger that this return may not keep up with the inflation rate, causing purchasing power to diminish in real terms. Investors who are profiled as being "conservative" in their risk profiles are likely to have a portfolio set up for the preservation of capital.

Income portfolios are the second type of asset allocation model and are aimed primarily at generating income for their owners. They normally consist of investment grade fixed income producing securities, real estate investment trusts (REITs), treasury notes, and sometimes stocks of blue-chip companies that have a lengthy history of paying continuous dividends. Blue-chip companies are large, and well-established, with a stable history of earnings and dividend payments. Their stocks are generally regarded as being less risky investments than those of smaller companies, although this is not always the case. Income portfolios are generally geared towards investors whose primary source of income is now coming from their portfolio investment. People such as the retired, widowed, and non-working could have a need of such a portfolio to cover their living expenses. These are some of the basic factors which will be determined during the relevant client's risk profiling.

The third type, a balanced portfolio, is the half way meeting point of type two (income) and type four (growth) portfolios, and investors exhibiting a "moderate" degree of risk tolerance might have this type of asset allocation. This portfolio type is the most emotionally sound when it comes to investor interests. The balanced portfolio model allocates assets among a mixture of cash-generating investments, as well as assets that are expected to moderately appreciate in capital value. This has the added comfort to investors of a more stable value than that of the all-growth

portfolio. Balanced portfolios tend to divide the funds between medium term investment-grade fixed incomes securities, as well as dividend-paying common stocks of distinguished companies.

Model type four is that of the growth portfolio. It is aimed primarily at investors starting off their careers who are interested in long-term wealth generation. The investor is not reliant on the portfolio for his or her current income source, as he or she is generally working and living off a salary. Therefore, these investors might have a "moderate-to-high" level of risk tolerance when being profiled. Funds are periodically deposited into this portfolio to increase the investor's position. These portfolios can consist of up to 100% invested in common stocks, a significant portion of which might not pay dividends and are somewhat young. Growth portfolios vary in their performance depending on the market trend. During a bull market, growth portfolios tend to outperform others, whereas during a bear market, growth portfolios are those which suffer the most. This brings the discussion to the next point of departure, bull markets and bear markets, and the implications of each on portfolios.

2.4 Bull and Bear Markets

The term "bull market" refers to a persistent rise of the prices of securities in the financial market, or continuous periods of higher than usual returns (Pagan & Sossounov, 2003). It can refer to any traded market, such as stocks, bonds, currencies and commodities. It is characterised by investor confidence, optimism, and expectant continuity of healthy results. A "bear market", however, is quite the opposite. This is a market trend in which the securities prices are going through a period of sustained decline, and below average returns (Pagan & Sossounov, 2003). Losses are anticipated, and this negative sentiment tends to be self-sustaining due to the prevalent pessimism that characterises such a market. These different market trends can be caused by a number of factors. These can include inflation, interest rates, earnings, oil and electricity prices, international and domestic issues such as war, as well as investor sentiment and opinion. All of these factors and more contribute to market volatility.

These bull and bear market trends can last any length of time, from months to years, and it is impossible for anyone to adequately predict what is going to happen in the market. However, judging from the market movements in the past, the average durations of each market trend can be estimated. A study performed by Pagan and Sossounov (2003) involved examining the natural log of the monthly stock price index for the United States of America (U.S.A) over the years 1835 to 1997. It was established that, over the preceding 25 years, the average duration of bull markets was approximately 25 months, and bear markets lasted approximately 16

months. It was also found that the average returns during a bull market were significantly stronger than

the average returns during a bear market. This is evident in Figure 1 appearing below.

Figure 1. Log US stock prices 1835/1 – 1997/5



SOURCE: Pagan & Sossounov, 2003

One can see that these movements in the stock prices occur often and with a different strength each time. It is therefore important to be aware of these market changes in order to take advantage of opportunities and hedge against threats when managing a client's portfolio.

The differences in investor sentiment and confidence during bull and bear markets are expected to have an effect on clients' risk profiles during each respective market trend. Consequently, if the client is well-informed as to what the implications of these differing market trends are, it is expected that he or she would likely present a different risk profile during a bear market than would be observed in a bull market. Specifically, during a bullish period, the client is predicted to be optimistic and may well be prepared to take on more risk than he or she would tolerate when the market is going down (bear market). These expectations are supported by Davey and Resnik, (2008), when they state "many advisers have witnessed cyclic behaviour pattern – clients are risk seeking in bull markets and risk avoiding in bear markets". This study will go one step further by testing these expectations in a statistical manner.

2.5 Conclusion

It is the responsibility of the financial advisor and the portfolio manager to perform a rigorous enough investigation into the relevant risk tolerance of each one of his/her clients. According to the above literature study it is clear that not only the obvious demographic factors, but also psychological factors,

and the current market conditions should be taken into account during the risk profiling process, as these inputs are vital in the critical asset allocation decision.

3. Data and Methodology

The risk tolerance of investors is affected by a numerous amount of factors, including those psychological as well as external to the individual. These factors will in turn be affected by the current market trend. Therefore, it is hypothesised that risk profiling during a bull market will be different to risk profiling during a bear market, and portfolio managers should be aware of this, because it will affect the relevant strategic asset allocation of the client's portfolio. The hypothesis can be stated as:

- H_0 : There is no statistically significant difference between risk profiling during a bull market and risk profiling during a bear market.
- H_1 : There is a statistically significant difference between risk profiling during a bull market and risk profiling during a bear market.

Risk profiling was performed on a sample of 210 respondents by means of a risk-profile questionnaire. Specifically, investors under the age of 33 years were targeted. It is expected that a wider range of risk tolerance levels will be experienced within a younger group of investors as their experience in the financial markets are less and their investment objectives may vary widely, as opposed to older investor groups. Therefore the results based on a young age group should give a very clear indication of whether behavioural differences, resulting from different

market phases, will indeed have an effect on their attitude towards risk.

Due to the fact that the research involves determining the actual risk profiles of the sample population, the questionnaire used was not one that has been assembled by the researcher. Instead an actual risk profile questionnaire that is used by a well-established South African firm has been attained. Permission has been granted to use the exact replica of the risk profile questionnaire, and the firm from whom it was acquired will remain unnamed for privacy reasons.

Three versions of this risk profile questionnaire were distributed to candidates:

The first had the conditions of a bull market simulated, so that the respondent can imagine he or she is currently in a bull market phase. The bullish conditions simulated entailed the following:

- Demand of commodities and securities is in excess of supply thereof (more willing buyers than willing sellers)
- Securities prices are following an upward (increasing) trend, and have been for the past six months
- Investor sentiment is positive and profits are anticipated
- Economy is strong and is perceived as such

The second version of this questionnaire was that of the bear market conditions:

- Demand of securities and commodities is less than the supply thereof (more willing sellers than willing buyers)
- Securities prices are following a downward (decreasing) trend, and have been for the past six months
- Investor sentiment is pessimistic, and investors are beginning to move their money out of equities and into less risky fixed-income securities
- A decline in profits is anticipated, due to a weakened economy

Lastly, the third version of the questionnaire entailed no market condition being simulated, and the respondent was required to assume current market conditions. At the time of the investigation, the market was going through a bear phase. Therefore it was expected that the responses to the questionnaires gathered lastly would be highly similar to those gathered from the bear market simulated questionnaires. If this was the case, and the bull market simulated questionnaire responses exhibited a significant difference from the other two, this should strengthen the argument that the risk profiling performed during each market trend will exhibit a significant difference.

After the questionnaire responses have been gathered, within each of the three groups of questionnaires, the respondents were categorised into their five risk tolerance categories: aggressive (high

risk tolerance); moderately aggressive; moderate; moderately conservative; and conservative (low risk tolerance). These groups of responses were studied and tested, to determine if there is a statistically significant difference between the average risk profile of investors during a bull market and during a bear market.

The relevant null hypothesis predicted is that there is no statistically significant difference between two means, and the alternative is that there is a statistically significant difference between two means. A paired samples T test was used to detect significant differences between the observed distribution of data along the scale of risk tolerances (aggressive; moderately aggressive; moderate; moderately conservative; and conservative), and the expected difference based on the null hypothesis.

4. Results

4.1 Descriptive Statistics

Questionnaire results were grouped into five categories of risk tolerance, and the key is as follows:

- 1 – Conservative
- 2 – Moderately Conservative
- 3 – Moderate
- 4 – Moderately Aggressive
- 5 – Aggressive

To explain this key, “conservative” means that the investors willingness and ability to assume risk is low, in other words that respondent exhibits a high degree of risk aversion. Risk aversion is the degree of an investor’s inability and unwillingness to take risk (Maginn, Tuttle, McLeavey & Pinto, 2007). Risk aversion and risk tolerance are indirectly proportional, for example, an investor with a high degree of risk aversion will consequently exhibit low risk tolerance. On the other end of the scale, an investor who is found to be in the “aggressive” category will generally have a lower degree of risk aversion, and a higher degree of risk tolerance. “Moderate” on the other hand, will be the meeting point of these two extremes. A “moderate” investor will be neither particularly conservative nor particularly aggressive in his or her investment strategy, but rather follow a medium risk investment strategy in selecting the appropriate strategic asset allocation.

The mean of each of the three market-simulated groups are:

- No Market Assumptions – 3.24
- Bull Market Assumptions – 3.17
- Bear Market Assumptions – 3.06

The above shows that all three groups exhibit an average risk tolerance of moderate to moderately aggressive. This can be seen as surprising, as for investors of the age 33 years and below one would, on average, expect a higher average risk tolerance (Maginn, Tuttle, McLeavey & Pinto, 2007) and a

wider range of averages. Therefore, the observed means would be expected to be between 3 and 5 using the risk tolerance key, not between 3 and 4 as was actually observed.

The standard deviations of each of the three market-simulated groups are:

No Market Assumptions – 0.806%

Bull Market Assumptions – 0.613%

Bear Market Assumptions – 0.679%

Due to the data set only ranging from 1 to 5, one would not expect there to be a large dispersion about the mean. If one wanted to get very particular however, it can be noted that the standard deviation of the “no market assumptions” group is almost 0.2 percentage points higher than the other two groups. This may be attributed to the fact that, when presented with no market conditions to keep in mind while filling out the risk profile questionnaire, factors other

than the prevailing market condition rule the way respondents interpret the questions, and this may lead to a greater variance in responses.

4.2 Inferential Statistics

In conducting the paired samples T-tests, the following three combinations were run:

- No market assumptions vs. bull market assumptions – abbreviated as No/Bull
- Bull market assumptions vs. bear market assumptions – abbreviated as Bull/Bear
- No market assumptions vs. bear market assumptions – abbreviated as No/Bear

The T-statistics and P-values of the three combinations are presented in table 1.

Table 1

Combination	T-Statistic	P-Value
No/Bull	0.567	0.573
Bull/Bear	1.134	0.261
No/Bear	1.371	0.175

The rejection rules would be as follows at the 5% level of significance:

T-Statistic < 1.96 and P-Value > 0.05 Do not reject the null hypothesis

T-Statistic > 1.96 and P-Value < 0.05 Reject the null hypothesis

For all the combinations, it can be seen that one would fail to reject the null hypothesis that there is a statistically significant difference between risk profiling during each of the two relevant market phases. This was expected for the No/Bear combination, because, at the time of this investigation the current market condition (assumed under the “no market assumptions” simulation) is that of a bear market. Therefore, there should be no difference between the “no market assumptions” simulation and the “bear market assumptions” simulation. However, this was not expected for the other two combinations of Bull/Bear and No/Bull.

For both combinations it can be seen that the observed T-statistics of 1.134 and 1.371 respectively are less than 1.96, and the observed P-Values of 0.261 and 0.175 respectively are greater than 0.05. This evidence suggests that there is no statistically significant difference between the means of the risk profiles of the respondents during bull and bear markets, and so, one would not reject the null hypothesis at a 5% level of significance.

5. Future research

A possible reason for the rather surprising results could be the assumption made regarding the best age group to target, namely people aged 33 years and younger. Although theoretically (and according to the reasons provided for selecting this age group as stated

in section 3) this age group should provide the most accurate results, it is possible that extending the target group to the total investing population in South Africa could offer results that are more in line with expectations. It is therefore suggested that a similar study be performed in future extending the target population group to the total investing population.

6. Conclusion

Using a sample size of 210 respondents below the age of 33 years, it was observed that respondents did not exhibit a statistically significant difference in their risk profiles during a bull market and during a bear market. Therefore, for the purposes of this study, at a 5% level of significance, the null hypothesis was not rejected, and so it can be concluded that the current market condition does not have a great influence on the risk tolerance of (young) investors. It may be possible however that results that are more in line with original expectations can be obtained by extending the sample to also include participants of other age groups.

Although the results of this study were not initially anticipated and the findings resulted in not rejecting the null hypothesis, based on the literature study there is still a valuable contribution that this case makes for the investing world. The research leaves the reader with more thoughts to ponder about the risk profiling process, and to wonder if the

questionnaire method of risk profiling as it stands is sufficient in its role towards the optimal strategic asset allocation.

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