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Investor behaviour in bear and bull markets

A study of the PPM system

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Abstract

Recent volatile markets raise questions how individual investors differ in investment behaviour and preference during changed market environments. This paper provides a study of investment preference based on information within the PPM system, using yearly data of all funds in the system during the period 2000-2008. The purpose of this thesis is to examine if there are differences in investor preference in bear states compared to other market conditions. Through regression analysis we find no significant difference for home bias, contrarian strategies or risk aversion between genders in bear states. Our main findings are the significant results of investors favouring safer funds to a larger extent in bear markets compared to non bear markets. Additionally, higher management fee of funds has an increased negative impact on capital inflow and number of investors selecting a fund during bear markets. This highlight the importance of awareness of how individual preferences change under different market conditions.

Key words: PPM, Bull and Bear markets, Investor behaviour

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1. Introduction

In the light of the volatile markets conditions the world recently has experienced, and within close memory of the dot com crash in the start of this decade which financially hurt investors around the world, our goal is to investigate individual investor behaviour through the past 10 years. To be able to perform an analysis of this type a comprehensive and descriptive data set is needed. This is found within the Swedish Premium Pension System (PPM), with a closed set of information factors given to investors to attract their attention to investments in funds. In 2000 the new PPM system was established in Sweden, allowing for private persons to individually allocate 2.5% of their income in their pension savings (PPM Website (2008)). The Premium Pension System was built after a period of decades of positive market returns and only allowed for choices in risk bearing funds.

With a basis in changed market conditions we investigate if different market settings and investment environment has had an impact on investor behaviour, more specifically how investor preference changes by the presence of bull and bear market conditions. The data set we use covers all funds in the PPM system and the different characteristics of each fund. With the help from the data we analyse how PPM savers respond to information communicated to them about characteristics of the funds by studying how they select funds and allocate capital within the system. This is examined with a base in classical financial theory and complemented with behavioural finance theories.

Quite a few research papers can be found investigating the PPM system in its current setting. Engström and Westerberg (2004) examine the implication of fund characteristics on investor attraction to funds during the period 1995-1999. The main findings are that investors show herd behaviour when investing, and investors have a bias towards risky funds, also concluding that management fee is an important determinant for fund selection. In the same line of research Bergstrand and Nyström (2009) build on the research of Engström and Westerberg (2006), but cover a longer period and more fund characteristics. Parts of Bergstrand and Nyström's (2009) research indicate that different investment preference can be found amongst the PPM savers depending on the time period treated. More findings conclude that past returns, management fee and different fund types affect preferences for funds, thus demonstrating new and to some extend contradicting results to Engström and Westerberg (2004). The research of Andersson and Arnlund (2002) is also focusing on the evaluation of investor behaviour within the PPM system, they conclude that the major influential factors of investor preference are risk and return when analyzing data for 2000-2002. Borg et al (2007) and Helin and Sparf (2005) investigate which individual characteristics within the investor group that give rise to active investment and which characteristics that makes people choose to refrain from investment. A similar study on investor behaviour within pension systems is performed on US investors by Angew et al (2003), who also evaluate individual investors and identify

what type of investors that are attracted to certain types of funds. It is concluded that equity allocations in the 401k Plan to a large extent are higher for male-, wealthier- and married investors. In these research papers the possible impact of changed markets and investment environment on investor choice and preference is not taken into account, but rather taken as being static. Something we identify as a gap in the current literature.

Cronqvist and Thaler (2004) furthermore evaluate the PPM system and how the split between choosing to actively manage the investment and choosing the default option developed from 1999-2003. They conclude that it is important to encourage investments to get investors more involved in the active option since the selection in the default option had increased during the time period while the marketing efforts of an active choice decreased. The result raises the question of if there should be an active option all together. Further research on PPM has been covering fund performance and if an active choice actually is beneficial. Lundgren and Jacobson (2009) come to the conclusion that active management is not beneficial due to high alternative cost to find the top performing funds compared to the return these funds provide. A further finding is that utility and return might be negatively affected by active management. From these papers we conclude that it is of importance to identify what factors actually stimulate investments within the system, thus what type information that should be communicated to increase the attraction of each fund.

To our knowledge few studies have examined individuals' investment preferences when investing in different market conditions, and overall pension investment strategies in bull and bear markets. However Gidolin and Timmermann (2004) examine if the presence of bear and bull markets have an effect on portfolio holdings. Due to the fact that the risk return trade off varies substantially between the two market states, it is argued that this should have an impact on investor's optimal portfolio. Weller and Wenger (2008) have the same line of reasoning. They suggest that since the volatility in investment returns increases, assuming constant investor risk preferences, the optimal share of equities should decrease. Schultz (2002) argue that changed strategies in bull and bear should be seen as a rational investment strategy, due to the fact that changed investment environment calls upon a non static investment scheme. Gidloin and Timmermann (2004), Weller and Wenger (2008) and Schultz (2002) all base the research on rational investment schemes, thus the optimal strategies have their base in Markowitz (1952) portfolio strategies. Not taking into account possible irrational behaviour.

Pension savers and investors have been studied in a broader context by Alestalo and Puttonen (2006) examining institutional asset allocation in Finnish defined benefit plans. The conclusion is that the ALM structure has a large influence on the investment behaviour but also indicate that irrational factors could

help to explain the investment schemes by the institutions, however the research leaves out what irrationalities this might be. In the light of the unexplained irrational behaviour, behavioural finance theories have grown to become popular and important in helping to analyze the irrationalities that are present on the market that rational investment theories fail to explain (Shiller (2001)). Kahneman and Tversky (1979) examine investors' actual decision making under the presence of risk and find that investors tend to overweight certain outcomes and underweight uncertain outcomes. Through the years researchers have added yet another dimension to the analysis of both investor behaviour and classical financial theories by comparing gender investment schemes (Angew et al (2003)), and describing which gender that demonstrates a larger amount of signs of sophistication (Barber and Odean (2001)).What to a large extent has been left out in the field of behavioural finance theories focusing on examining investment schemes is the impact or market factors on behaviour.

In more detail, the methodology we have adopted in this thesis is that we use the comprehensive PPM data set from 2000 to 2008 and create three investment portfolios; an aggregated gender neutral based on both male and female investments, a female and a male portfolio. By using fund characteristics as a proxy for influential factors of investor preference and the three portfolios we explain what factors are taken into account when investing within the PPM system, and particularly we focus on differences in behaviour under bull and bear market presence. The different hypotheses are based on financial theories and will examine risk aversion, management fees, past returns, home bias and gender differences analyzed in changed investment environment.

We create two variables to function as our dependent variables and proxies for investor selection. These are based on the increase in total capital value of the yearly investments, *Capital inflow* and the change in total number of investors in each fund, *Change in choice*. These will capture the discrepancy of investors investing more capital to the ones investing less and the importance of a fund, regardless of the investment amount. We also create control variables to be included in the regression models, to avoid misleading results regarding increased flow and selection growth.

We initiate our analysis by examining each hypothesis along the lines of assuming that investors will demonstrate differences in investment preference based on the prevailing market characteristic. We test the possible differences through Wilcoxon rank-sum tests. In the first of our five hypotheses we examine if there is a difference in the preference for fixed income and equity individually between the periods. Thereafter we run several combinations of regressions starting with only fixed income under the bear market state and build on this regression, adding further independent variables, meant to add robustness to our results. To test our second hypothesis stating that management fee is an important explanatory factor

for fund selection, we regress management fee with bull and bear market dummies. Our third hypothesis concerns the home bias phenomenon and is first tested Wilcoxon rank-sum test to be followed by multivariate regressions. We test both for funds based domestically and foreign based, as well as the geographical focus the funds have. Fourth via a ranked test we examine if there is a difference of investing in low and high performing funds in the two market states. A regression analysis is also used to test if we can find any indications of how investor preference is impacted by the presence of a bear market. Last we investigate if the risk aversion between men and women differ in a bear market setting. The way of testing differences between men and women follow just described methodology, initiated by describing differences between the genders and thereafter testing if the differences can be ascribed any significance.

From our analyses we provide new evidence on fund attributes attracting investors. Our first finding is that investors favour safe assets in bear markets. Under bear market conditions fixed income funds have received increased capital inflow and seen a growth in the selection of funds. Second we prove that investors are even more sensitive to fees in bear markets compared to a non bearish market. Funds with high management fees have seen a decreased capital inflow and fund selection in bear market states. We find no support for investors showing a higher tendency of home bias, an increased preference for low performing funds or any differences between gender risk aversion in bear markets compared to other periods.

Although several studies on the Swedish pension system and investor behaviour has been conducted no closely related to market conditions has, to our knowledge, been performed to date. Our thesis is therefore of an exploratory nature, not being embedded in literature or theories. Thus we believe that we help to explain investor behaviour in a cyclical market rather than a static one. Furthermore, we contribute to the existing literature by highlighting the fact that investors are impacted by different fund characteristics depending on the market conditions. This is also of importance for the new pension system under development. This is the case due to the fact that awareness about changed behaviour in cyclical markets will be needed to be able to capture savers attention in a more favourable way compared to today.

The thesis can be split into the following structure. Next we will present the background of the PPM system and cover the academic framework. Both financial and behavioural theories and past research will be explained and set into the context of this thesis. Thereafter we present our hypotheses. Thereafter we describe our data and the reasoning behind the variables in the regression. The robustness of our model is also commented on. We also present our results in which the regression methodology is embedded. Last we conclude the results. We end with a discussion and suggestion of further research.

2. Background on the Swedish Pension System

In the beginning of 2000 the Swedish pension system was re-structured, enabling individuals to be involved and active in parts of their pension investments, the so called PPM system was developed. In Sweden the income pension consists of 18.5% of an individual's yearly pension based income. In 2000 the Swedish National pension system was reorganized concerning all individuals born 1938 and later. The income pension was split into two parts. 16% of the income is today invested in what is called "the income pension" in which the fund's value follows the income development in Sweden. The remaining 2.5% is left to be placed in the premium pension system through a yearly transfer into a personal PPM-account. In PPM each individual choose how the investment should be placed. Individuals are given the option to place the money in maximum 5 out of the, today, approximately 800 funds available in the system ranging from equities, fixed income funds, industry funds and hybrid funds such as mixed and generation funds. Changes in between the funds are allowed; once a choice has been made this change will be implemented as soon as new money is placed in the pension account. If the pension saver chooses not to invest the premium pension actively it will be placed in the default option called Premiesparfonden, a global equity fund managed by Sjunde AP-fonden. (PPM Website (2008))

Each fund is managed by fund managers charging a fee for performing this task, trying to create higher return than an in-active management setting. Not all funds are allowed to participate in the PPM system. For a fund to be eligible for the PPM it must, firstly, be under the control of the Swedish Financial Supervisory Authority 'Finansinspektionen'. Secondly, it cannot be created for the sole purpose of being a part of the PPM system and must thus be available for individuals outside of PPM. Lastly it must be registered as a securities fund. (PPM Website (2008))

When the structure was set in 2000, the system included 4.4 million individuals and had a capital base amounting to SEK 56 billion, by the end of 2008 5.8 million savers were included in PPM (PPM Website (2008)) with capital under management of approximately SEK 231 billion. (Annual report (2008))

3. Academic Framework

To be able to seize the aim of this thesis we present the academic framework in the following section, based on classical finance and behavioural finance theories. Behavioural finance theories present suggestions on how financial phenomena can be better understood by economic models in which some agents are not fully rational. Specifically it analyzes what happens when we relax the two tenets that underline individual rationality.

3.1. Optimal portfolio strategy

Markowitz (1952) revolutionized the field of finance with his famous article "Portfolio Selection" in which he explained the influence of risk on investor portfolio choice, hence introducing the concept of risk aversion. He showed that it is not only a matter of maximized returns but a trade off between risk and return. Risk in the sense that variance of returns is seen as undesirable. His expected return and variance on return rule, (the mean-variance model in modern finance), derives all optimal portfolios to maximize return with the lowest risk corresponding to that return. This is made possible through diversification of the portfolio by spreading allocation in between all assets. The notion of risk diversification has thereafter been built upon by other researchers, assuming rational and risk averse investors in a frictionless market. (Bodie et al (2008)) and (Khaneman and Tversky(1979))

A diversified portfolio can also be achieved by investing in international markets. The lower correlations between different country markets portfolios compared to intra market portfolios decrease the systematic risk and thus create an internationally diversified portfolio. (Solnik (1995)) and (Bodie et al (2008)). Longin and Solnik (1995) find that correlation between international markets increase in times with high volatility, Gidolin and Timmerman (2004) state that a decline in markets are more volatile than a market increase, hence we argue that the upside with diversification could be offset by a market decline.

The popularity of risk-return trade-off theories makes us comfortable in arguing for risk being a factor of high importance when choosing investments irrespective of market condition. Engström and Westerberg (2004) demonstrate that investors have a preference for risk, as the data set used show that allocations are biased towards equity funds. This however, they argue could depend on the overrepresentation of equity funds to the investor. On the other hand, investors tend to, when investing in equity choose the funds with low risk indicating that they favour high risk asset types but low risk equity funds. Based on this we aim to investigate if the importance of risk might be exaggerated further or offset completely by extreme market conditions.

3.2 Prospect theory

Prospect theory was first introduced by Kahneman and Tversky (1979) as a complement to the well regarded utility theory (Shiller (2001)). Kahneman and Tversky (1979) explain how people make choices in situations that involve risk, explaining that people put a lot of weight on outcomes that are known with certainty and underweight uncertain outcomes. Expected utility theory has its base in the assumption of the rationality of man, stable realities and well thought through decision. However, it has failed to correctly explain human behaviour (Shiller (2001)). In an experiment on human behaviour Kahneman and Tversky (1979) give people the choice to select in between two lotteries, one with a win of 3000 with

a 25% probability and one with a win of 4000 with a probability of 20%, the second lottery was chosen by 65% of the people. In a second scenario people were given the option of winning 3000 or 4000 with 100% and 80% probability respectively. 80% of the test group chose the first option. This discrepancy between the 65% weight towards the second choice in the first scenario and 80% towards the first choice in scenario two is evidence against the expected utility theory, since it predicts people to be indifferent towards the two scenarios. The weight people put on very probable outcome is not linear to the weight they put on the impossible outcomes, hence small differences in probabilities give an even smaller difference in between the weight individuals put on the outcomes, however if the probabilities differ, much more weight is put on the more safer bet. Furthermore, the key factor in prospect theory is the individuals own reference point. The reference point is where the value function of the theory change slope considerably. The slope is always positive, but it goes from being convex for levels below the reference point, hence on the left hand side of the y-axis below the x-axis, to becoming concave for levels above the point of reference. This important feature translates into people, when faced with only risky outcomes, will behave in a risk averse manner no matter how small the amounts at stake are. (Shiller (1998)) (Bodie et al (2008))

In a bear period the volatility is higher than in an upturn (Gidolin and Timmerman (2004)) thus the probability of a loss is higher than in any other market state, and few riskless alternatives can be found. We therefore argue based on the prospect theory that individuals in bear markets will act in a more risk averse way and risk will be an important factor when choosing investments.

Engström and Westerberg (2004) further points out that investors in the PPM system are faced with two types of risk when choosing investments. First they need to choose in which asset class to invest fixed income, equity or a mixed alternative. Equities thought of as being a high risk choice compared to fixed income and mixed funds considered to be the low or medium risk alternatives respectively. Secondly, risk indirectly becomes a factor of consideration since all funds report their standard deviations, hence informing investors of the risk associated with that specific fund.

3.3 Efficient market hypothesis

The efficient market hypothesis states that stock prices reflect all available information (Bodie et al (2008)), hence all securities reflect their intrinsic value in efficient markets. This implies that all information can be attained by every market participant almost freely (Fama (1965)). Based on this hypothesis it is said that future prices and returns cannot be predicted by any models as it is only new (unpredictable) information in the market that sets prices. Today's stock price is given by today's information and tomorrows price by the information tomorrow, hence prices are said to follow a random

walk. (Bodie et al (2008)) and (Malkiel (2003)). One implication of the efficient market hypothesis is that there is no strategy that can affect and improve performance and subsequently as Cochrane states "*If one cannot systematically make money, one cannot systematically lose money either"*. (Cochrane (1999)) This indicates that rational investors should never pay anything extra for getting their funds actively managed as there is nothing to gain from using well planned investment strategies. On the other hand Campbell and Shiller (1998) argue that a large upward movement in stock prices in one period, such as the late1990's, increases the probability of below average rates of return in the future as asset prices revert to the mean, relative to expected earnings. This means that a investor wanting the best return on investments should hold more stock when the market is down, if risk is held constant according to the reasoning of the mean reversion theory.

Engström and Westerberg (2004) state that management fee is one of the most important factors for driving investment choice, showing a negative and significant relationship to fund selection. This indicates that investors are fee sensitive and avoid high fee funds in general. We find it interesting to investigate if the general fee sensitivity remains constant all through the period or if it is changed during the cyclicality.

3.4 Home Bias Puzzle

French and Poterba (1991) show that investors tend to be overly optimistic about the expected return on domestic stocks and therefore weight their portfolio holdings towards the domestic market even though international diversification has proven to reduce risk (Solnik (1995)). This behaviour is known as the home bias puzzle (French and Poterba (1991)) and (Tesar and Werner (1995)). If a constant investor risk preference is considered, classical financial theories suggest that investors should reduce risk for each level of return (Markowitz (1952). Return is however not maximized under the home bias setting (Tesar and Werner (1995)), since the investors do not utilize the advantages of lower correlation between international markets to reduce risk further (French and Poterba (1991)). Many explanations to the puzzle have been thought of. For example Black (1974) focus on barriers to international investing such as taxation, governmental restrictions, culture and currency fluctuations. These have been accepted as good suggestions to solving the puzzle. Moreover, Coval and Moskowitz (1999) has taken the phenomenon of the home bias puzzle even further by showing a bias when studying allocation of domestic stocks. They find that investors tend to invest in locally headquartered companies, indicating that something else lie behind the reason for the home bias.

This incomplete diversification and Schultz´s (2002) evidence that investors tend to hold a less geographically diverse portfolios in bear markets makes us interested in testing whether we can see a

pattern of home bias in times of crises, when the international markets are more correlated (Longing and Solnik (1995)) and the effect of diversification might be offset.

3.5 Contrarian Investors

Grinblatt and Keloharju (2000) compare behaviour between different investor types and conclude that private individuals act like contrarian investors. The definition of a contrarian investment strategy is that one invests in losers and sells winners (Titman et al (1995)). Grinblatt and Keloharju (2000) mean that a contrarian investment regime is less sophisticated than a momentum regime, which is used by institutional investors. They show that in the Finnish market a contrarian investment strategy performs worse than a momentum strategy. Jegadeesh and Titman (1995) argue that, even though overreaction and delayed reaction could lead to profits of contrarian strategies in theory, the main factor to profits is the reversal of the firm-specific component of returns. Contrarian investment behavior is also documented by Odean (1998) who examines the so called disposition effect, hence he examines whether it is the case that investors tend to sell winners too soon and hold on to bad investments (losers) too long. He finds that individual investors show significant preference for selling winners and holding on to losers. Moreover the findings point towards that this behavior is not related to rebalancing portfolios or reluctance to incur the higher trading costs of low priced stocks. Nor is it justified by subsequent performance, instead find that it leads to lower returns in accordance with Grinblatt and Keloharju (2000).

Odean (1998) mean that a possible reason for investors to cash out on winners is because they believe in that the losers soon will turn into winners instead of the argument that they are unwilling to realize losses. Depending on the beliefs about future return above mentioned reasoning can be said to be rational or irrational. If one believes in mean reversion, individuals seem to be rational in their investments. It has been shown, by Andreassen (1988) that this is the underlying assumption in short term trading.

Cooper and Gutirrez (2004) examine the institutional momentum strategies and if the market state condition is important to the profitability of such a strategy. Two phases are defined: “up” and “down”. When the lagged three year market return is positive they identify the up-phase. And when the same return is negative they identify the down-phase. The main finding is that between 1929 and 1995 a six-month momentum strategy generates negative profits in down states and positive in up states. The difference in profits is significant and they conclude that the state of the market is critically important for the result of momentum strategies.

Based on the research of Cooper and Gutirrez (2004) we argue that there are possible reasons to believe that the state of the market should have an impact on a less sophisticated investment strategy as well. Furthermore we are interested in investigating what type of investment schemes that will be adopted in

the PPM system in changed market states, if we can support the conclusions of Grinblatt and Keloharju (2000) and Odean (1998).

3.6 Women and Men

The line of research on investment behaviour among men and women is substantial and mainly covers risk aversion and performance. Barber and Odean (2001) show that men tend to be more overconfident than women. Overconfidence was measured amongst traders, and indicated that overconfidence is equivalent with holding a riskier portfolio than rational investors do for the same level of risk aversion (Odean (1998)). Barber and Odean (2001) also show that men tend to hold larger stock portfolios than women, hence arguing for them being more inclined to take on risk. This is supported by Angew et al (2003), who put forth evidence that men invests significantly more in equities than women. Similar findings of womanly conservatism compared to men is found by Sundén and Surette (1998), who depict that after adjustments of demographic variables women are conservative in their allocation in retirement plans. They however show that gender is not at all as significant as the interaction effect of gender and marital status when looking at the allocations. Sundén and Surette (1998) furthermore show that marital status combined with gender will affect the weighting towards risky assets.

Research contradicting above reasoning with a higher risk aversion of female investors can be found. Clark and Pitts (1999) show that investment in pension plans did not differ by gender and Schubert et al (1999) present evidence that the risk aversion is not significantly different. Graham et al (2002) have the same reasoning, and state that the difference in attitude to investment does not depend on how they asses risk but rather how men and women differ in their information processing. This is in line with Meyers-Levy (1986) who argues that women integrate and men eliminate when processing information, indicating that women are more comprehensive when assessing information. Both sexes categorize information for ease of processing however men are more broad in the categorization and use few subcategories, while female function in the opposite way reflecting more details. This suggests that women tend to be more accurate when dealing with complex products and detailed information.

The contradicting research opens up for questions and interesting areas of research, hence we believe that it would add to the line of research to further investigate if gender differences can be seen in between the genders in bear markets as well as if an extreme market has any impact on gender differences.

3.7 Bull and Bear markets

Based on previous research and the behavioural and classical theories we believe that the impact on investor preference from a bear and bull market state cannot pass unnoticed. Since we aim at investigating investments under the presence of bull and bear markets the definition of these states must be made clear. One can discuss how to characterize business cycles and trends in financial markets, Schultz (2002) describes a bear market as being a market that is depressed or declining. Historically bear markets have meant market declines in the range of 13.9% to 90% (Schultz (2002)) hence we feel comfortable in arguing that a bear market can be characterized by a decline in a benchmark stock index of more than 10%, this is in line with Peterson and Berglund's (2007) definition of a bear market. Peterson and Berglund (2007) in addition define a bull state as an increase in the benchmark stock index of 15% or more. Fabozzi and Francis (1977) measure bull and bear states with monthly data and define a 0.5 standard deviation of the market as a large movement; since we only have yearly data the above mentioned proxy seems reasonable.

During the period from 2000 to beginning of 2009 two obvious bear periods and one clear long bull period can be identified. We have defined the period from 2001 to 2002 as our first bear state, following the dot com bubble burst. The second bear state is the major decline on the world market following the recent financial crisis; hence 2008 is our second bear state. The bull market in between the two periods is most in line with our definition for the years from 2004 to 2006. We exclude 2003 since this is a year of contradicting market conditions this is the same reason for why 2007 is left out. In both of these years the market is experiencing short periods of small bull and bear states as can be seen in Graph 1.

4. Hypotheses

On the basis of presented theories and past research we have developed five hypotheses to be tested in our aim to answer if investor behaviour and preference change in different market states. As well as what information factors that drive investment preference. In order to develop findings from theories we have chosen to use risk, asset class preference, management fee, geography, past returns and the implications of bull and bear regimes as input in the hypotheses. Our hypotheses are presented below.

Hypothesis 1

Investors favour safer funds more in bear periods.

Based on optimal portfolio strategy theories we argue that risk is something that will affect investor preference. To put it into the context of this thesis we furthermore expect, leaning back on prospect theory, that more risk will lead investors to act in a risk avers manner. Thus we expect that PPM savers

have a tendency to choose safer funds in bear markets compared to a non bear market state since the volatility is higher.

Hypothesis 2

Management fee sensitivity is exaggerated in bull and bear market states.

Engström and Westerberg (2004) claim that one of the most important factors for favouring a fund is the low management fee. Hence they find a negative relationship to the fund selection, thus indicating that investors believe in the efficient market hypothesis. We therefore find it interesting to examine if the PPM savers negative attitude towards high management fees is enhanced due to market cyclicality as well as it being a factor of importance for fund preference. Our expectations are that the sensitivity will increase compared to a non bear market. This is based on investors acting in accordance with optimal portfolio theory and will maximize return for a given risk hence we argue that an investor will not pay more for something not giving a certain higher return. Hence the beliefs in the efficient market hypothesis will remain in a bear market.

Hypothesis 3

Investors favour domestic assets more in bear periods.

The basis for this hypothesis lies in the home bias theories and on the notion of diversification. We argue that in times of volatile markets Swedish investors will be more biased towards the Swedish market in line with Shultz (2002). Hence they will have an overly optimistic view of the expected return of Swedish funds in a declining market environment.

Hypothesis 4

Investors favour funds with low past returns to a higher degree in bear periods.

With a stand point in the theory of mean reversion in stocks, Campbell and Shiller (1998) argue that a large upward movement in prices, increases the probability of lower rates in the following period as prices return to the mean. We expect investors to buy losers in bear periods as in accordance with mean reversion investors will expect prices to return to and create positive returns. Odean (1998) also argues that this could be one reason for contrarian strategies of individual investors.

Hypothesis 5

Women show a higher degree of risk aversion in bear markets compared to men.

We take the stand point of Barber and Odean (2001) and Sundén and Surette (1998) of women being more risk averse than men. Thus we believe that this will be even more apparent in a bear state where the volatility is high and the investment environment riskier.

5. Data

5.1 Data set

The data set covers all funds included in the PPM-system from the years 2000-2008. It is all year end data and it is derived from the PPM's website, reports and own database. The merging of this information has mainly been performed by Bergstrand and Nyström (2009).[1] They note that some discrepancies between the information from the various sources occurred when matching fund name and fund number between the years, this occurs when acquisitions has taken part or when PPM has changed definition of the funds. The data presents values for female and male investors as well as on an aggregated level. It should be noted that in line with Chevalier and Ellison (1997) the dependent variable needs to be lagged, in our case this applies to our two dependent variables, hence the models are based on data from 2001 to 2008. Due to the lagging of the dependent variable we lost 1095 observations from the original 5998. In Table 2-4 we see how the number of observations changes during the years, for the total portfolio as well as for men and women respectively, due to the increase of funds in the system. The data set also contains the default option for investors that do not specifically make an active choice. As this fund does not represent active choice it is excluded from the data and we lose 9 more observations.

The PPM set is split into different asset class portfolios in line with the reporting from PPM themselves. The different assets are equity originally consisting of 71.1% of the total funds, fixed income, 15.8% of the total set, mixed funds 7.7% and generation funds, 5.3%. The generation funds are heavily invested in stocks if the pension age is far in the future and shifts the weight towards fixed income the closer to pension a person gets (PPM Website (2008)).

Initially we regarded a large set of variables of fund characteristics, such as Sharpe ratios, industry funds, time included in the PPM system and a broader set of geography portfolios, to be included in the regression model. However these were excluded in the process of searching for a suitable model as well

[1] We therefore take the opportunity to thank the two authors for helping us with this part of the data collection.

as when to match our exploratory aim of the thesis. The reason for excluding the Sharpe ratios, as another measure of risk is that there are not values for the entire period. Including each geography in our model not make sense since the aim only is to examine domestic versus foreign preference. Industry preference is not within the scope of this thesis.

Furthermore the data contain information on each fund's management fee as percentage of total fund value. Moreover, the standard deviation of each fund is included in the data and is the used risk measure in the model. The standard deviation of the total data set over the period has been 16.7 percent. As a measure of return the yearly average return of each fund is used. Each fund's investment focus and geographic base is also something given in the data.

The original split of focus of funds made by PPM are Asia and Far East, Biotechnology, Eurocountry, Europe/Eurocountry index, Europe/Eurocountry small cap, Global, IT and Communication, Japan, China, Latin America, Medicine, North America, North America small cap, Nordics, New markets, Russia, Great Britain, Swedish and foreign stock, Sweden, Sweden index, Sweden small cap, East Europe, Other industries, Other countries.

5.2 Outliers

When studying the observations for the aggregated, female and male portfolios we detect outliers for both capital inflows as well as for changes in number of investors for the different funds over the years. The outliers have extreme values that might dilute the results of our tests and regression and we therefore choose to exclude them from our sample. The method used is a Grubb's test for the different portfolios and variables. The test drops outliers that are greater than the critical value of the Grubbs test at a 5% significance level. (Thode (2002))

5.3 Variables

We want the dependent variable in our model to reflect the decision PPM savers make each year on the preferred type of fund. To accurately capture this effect we used two types of dependent variables, *Capital inflow* and *Change in choice*. The *Capital inflow* variable is used in accordance with Sirri and Tufano's (1998) and Chevalier and Ellison's (1997) definitions. It demonstrates the inflow/outflow of capital to a fund. By using the *Capital inflow* of assets into a fund we capture the monetary importance for each specific fund. It highlights the importance of the selection of persons investing more money compared to people investing less. Our second variable, *Change in choice,* will capture the fact that each person's choice is equally important, not depending on how much money they have saved or how much they allocate to each fund.

The two dependent variables are derived as followed:

$$Capital\ inflow_{i,t} = \frac{\left(Total\ value_{i,t} - Total\ value_{i,t-1}\right)}{Total\ value_{i,t-1}} - return_{i,t}$$

$$Change\ in\ choice_{i,t} = \frac{Number\ of\ Investors_{i,t} - Number\ of\ Investors_{i,t-1}}{Number\ of\ Investors_{i,t-1}}$$

Where $Total\ value_{i,t}$ is the market value of the total PPM investments in fund *i* made at time *t* and the $return_{i,t}$ is the return of the fund during year *t*. Furthermore, $Number\ of\ Investors_{i,}$ is the number of investors that choose fund *i* at time *t.* The dependent variables were defined in the same manner for the female and male portfolios.

In order to investigate if investors will choose specific funds in different market states we identified 12 independent variables. To study if there is a difference in active choice of fund and fund investments between market states we created two dummy variables representing the years of extreme market conditions. The first embody the years in bear markets i.e. 2001-2002 and 2008, taking on a value of 1 for the mentioned years and 0 otherwise. The second dummy takes on a value of 1 for the years in bull markets, 2004-2006, and 0 otherwise. Hence 2003 and 2007 represent the base case. As there is an aim to investigate whether explanatory variables have different impact in bear states they have been multiplied by the market state dummy.

To examine if investors favour assets with different levels of risk in different market states, dummies were assigned for the equity and fixed income funds and are called *Equity* and *Fixed income*. This left the mixed and generation funds as our base case. As mentioned above the standard deviation, *Sigma,* of a fund's return is presented in percentages by PPM. This is assumed to represent a risk measure for a fund and will be regressed in this context. In order for *Sigma* not to be heavily related to equity funds, which are expected to differ more in volatility than fixed income, we normalize it. This is performed by dividing each observation with the average sigma for the relevant fund type. The *Management fee*, also presented by PPM, is examined when assessing the importance of management fees in bull and bear periods. In order to get results in the same range as *Sigma* this is converted into percentages.

To examine home bias in bull and bear periods we created two dummies for our geography portfolios based on the data of each funds geographic focus, called *Domestic focus* and *Foreign focus*. The foreign dummy includes all funds with foreign geographic focuses. Like in the case of the market states, the funds will have the value of 1 for the specific region and 0 otherwise. This leaves fund with no geographic focus

as base case. To further assess home bias in bull and bear periods we study where a fund is based. This was done through entering a dummy being 1 when the base of the fund is outside of Sweden and 0 otherwise, called *Based foreign*. To also be able to asses domestically based funds in bull and bear markets a dummy was created being 1 when the fund is based in Sweden and 0 otherwise, called *Based domestic*. These two were never run in the same regression, as when one is used the other represents the base case.

To asses past returns as a factor for fund preference in bull and bear periods we include two dummy variables representing high and low performing funds within each fund type, i.e equity, fixed income, generations funds and mixed funds. The *Top* dummy variable takes the value of 1 if the fund is in the highest third of returns within the fund type for the year preceding the investment choice and 0 otherwise. The *Low* dummy variable takes the value of 1 if the fund is in the lowest third of returns within the fund type for the year preceding the investment choice and 0 otherwise. This leaves mid performing funds as the base case.

In order to control for the increase in the PPM system as a whole two control variables were created, one for each dependent variable. These were created as follows:

$$Total\ Capital\ inflow_t = \frac{\left(\sum Total\ value_{i,t} - \sum Total\ value_{i,t-1}\right)}{\sum Total\ value_{i,t-1}}$$

$$Total\ Change\ in\ Choice_t = \frac{\left(\sum Number\ of\ investors_{i,t} - \sum Number\ of\ investors_{i,t-1}\right)}{\sum Number\ of\ investors_{i,t-1}}$$

Control variables were also created for the female and males portfolios.

To further add robustness to the results an additional control variable is added to the regressions. This is a variable meant to capture the increases of the number of funds, hence it is the sum of all the funds each year in the PPM system.

$$Total\ funds_t = \sum Fund_{it}$$

5.4 Robustness

Before going through our results given by our regressions we wanted to test for statistical weaknesses and breakings of OLS regression assumptions. One of the most important tenets of regression analysis assumptions is the one underlying multicollinearity. (Gujarati (2003)) The implication of having a model

with multicollinearity is that one may see very high standard errors and low t statistics, unexpected changes in coefficient magnitudes or signs, or non-significant coefficients despite a high R-square making the model hard to interpret (Princeton University (2007)). To test if we had multicollinearity in the independent variables we carried out variance inflation factor tests. Table 5 and 6 in Appendix document the results of the test for the aggregated portfolio for the regression containing *Fixed income, Equity, Sigma, Management fee, Foreign focus, Based foreign, Low* and *Top.* These are also multiplied by the bear dummy, which is together with the control variables for each regression represented as well. For all the tests the dummy variable for bear periods is over the benchmark value of 10. This is expected as it contains information for the whole set and we will thus not correct for it. For the other variables no tendencies of multicolliniearity are found, thus this will be the case on average as well.

A second important assumption of regression models residing on OLS grounds is that the residuals are homoscedastic. This means that the variance of the error term is constant. It is hard to merely heuristically tell if a model suffers from heteroscedasticity. We test for heteroscedasticity for the same model as above and we reject the hypothesis of constant variance, hence we conclude that there is heteroscedacticity in the data. We corrected for this heteroscedasticity through running regressions with the robust command. (Princeton University (2007)) A model having a normal distribution is also a basic assumption of an OLS regression model. Hence the regressors are assumed to be fixed in repeated samples. (Gujarati 2003). From studying the distributions of *Capital inflow* and *Change in Choice* we cannot confirm that our dependant variables are normally distributed. The robust command, also corrects for this discrepancy in our data.

Yet another tenant for regression estimation is the assumption residing on no serial correlation. Serial correlation can be defined as correlation between members of series of observations ordered in time or space. More specifically one variable that depend on its own value one period back or a variable affected by a increase/decrease in another is suffering from serial correlation (Gujarati (2003)). Since our analysis is performed on a yearly basis and not over a longer time period correlation over times is not expected, this is also the case for changes in variables.

6. Empirical findings and Analysis

Below we will present our analysis and our results. The section is structured along our hypotheses. The regressions used in the analysis have the following format:

$$Capital\ inflow_{i,t} = \alpha_0 + \beta_k X_{k,i,t} + \gamma_1 Dummy_{bear,t} + \delta_k X_{k.i,t} Dummy_{bear,t} + \theta_1 Total\_funds_t + \vartheta_1 Total\_Capital\_inflow_t + \varepsilon_{i,t}$$

$$Change\ in\ choice_{i,t} = \alpha_0 + \beta_k X_{k,i,t} + \gamma_1 Dummy_{bear,t} + \delta_k X_{k.i,t} Dummy_{bear,t} + \theta_1 Total\_funds_t + \vartheta_1 Total\_Change\_in\_choice_t + \varepsilon_{i,t}$$

Where $X_{k,i,t}$ is the k individual explanatory variable for fund i in year t. $Dummy_{bear}$ is the market dummy for a bear market state, taking the value 0 or 1 in year t. And $X_{k.i,t} Dummy_{bear,t}$ is the interaction effect of explanatory variable k for fund i and the dummy for bear markets in year t. $Total\_funds_t$ is our control variable for the sum of all funds in the system year t. $Total\ Capital\_inflow_t$ is the control variable for Total capital inflow in year t. $Total\_change\_in\_choice_t$ is the control variable for the total number of selections in year t .

Hypothesis 1

Investors favour safer funds more in bear periods.

To first test if there are any differences between the preference for fixed income and equity in the two market states we perform a Wilcoxon rank-sum test. The test procedure is to compare the preference for fixed income and equity in bull and bear markets individually and thereafter compare the two asset classes against each other in the separate market states. The first result is documented in Table 7. Here we see that, the variables of capital inflow and the selection of fund indicate that investors favour fixed income to a larger extent in bear markets compared to bull. We see that the probability of preferring a fixed income fund in volatile markets is 68% and 74% for *Capital inflow* and *Change in choice* respectively compared to choosing a fixed income fund in a bull market. Furthermore in Table 7 we see that same tendencies for the *Change in choice* variable when testing the preference for equity. This means that investors will increase the selection of equity funds in a bear market compared to a bull market. The *Capital inflow* variable shows the opposite result. From this test a significant difference between the states is shown, it indicates that the holding of equity is larger in bull than in bear periods. This gives more support for to the result from the fixed income tests and our hypothesis, rather than supporting the results from the *Change in choice* test. In Table 8 a comparison of the favouring of fixed income to equity is tested in each market state separately. The bear state show significant test statistics for both variables, and that there is less than a 30% probability that the preference for equity is larger than fixed income in bear states, indicating that in these volatile times investors will in the majority of times prefer a fixed income fund. The results support our hypothesis of investors favour safer assets in volatile times.

In a heuristic overview of the data it is clear that in 2001 and 2002 the decrease in value of equity holdings is not considerable. A clearer decrease in the value allocated to equity can be seen for 2008. The aggregated portfolio had 74% of total capital allocated in stocks 2007 and by end 2008 the percentage had

dropped to 63. If we examine fixed income, for 2008 we see a clear increase in the allocation of capital towards fixed income. In 2008 the capital allocation of the total portfolio increased from 6% to 14%. If we examine the number of choices a similar pattern arises. The number of selections to equity decrease during 2008 but 2001-02 the change is negligible. However the number of choices made to equity funds decrease all through the period. The reallocation has instead gone to fixed income which demonstrates an increase both for the aggregated and gender portfolios since the other type of funds are not showing any signs of difference. This gives further support for our hypothesis.

To start of the regression analysis of our hypothesis we regress the dependent variables on the interaction effect of fixed income and the bear market dummy according to the earlier stated model. The results from regression 1 is shown in Table 9 and 10, here it is documented that only the *Change in choice* regression return a significant coefficient of fixed income in bear markets. The sign of the coefficient is positive as expected, investors increase the fund selection of fixed income in bear markets, supporting our hypothesis. We thereafter regress only equity in a second regression still keeping the interaction effect with the bear dummy in the regression. The two regressions both return a negative and significant coefficient for equity in the bear state, seen in Tables 9 and 10, regression 2. The implication of the negative equity coefficient is that investors decrease the capital inflow to- and the selection of equity funds under a bear market presence compared to a non bear market. The result of a negative coefficient of the interaction effect of equity in the bear state indirectly support our hypothesis, since it indicates that riskier assets are not preferred in the bear market setting.

In regression 3, Table 9-10, we examine both asset classes. In the *Change in choice* regression we find that the equity coefficient in the bear state is negative and significant, again indirectly supporting our hypothesis. The result for C*apital inflow* is the opposite. The equity coefficient demonstrates a positive sign, indicating that capital inflows will increase in equity funds in bear markets. This was an unexpected result. The summarized implications are that in a bear market setting investors decrease the fund selection growth and increase capital inflow to equity funds.

To take into account risk aversion from less direct angle we include the risk variable, *Sigma*. In Table 9-10, regression 4, we find the result from *Sigma* only being regressed with the market dummy for a bear market state. In both regressions the *Sigma* in the bear state is significant and has a negative sign, something we expect to see. This result indicates that investors in the PPM system are more reluctant to choose funds with higher volatility in bear periods. Furthermore we add *Fixed income* to the regression with *Sigma*, seen in regression 5 in Table 9-10. The coefficient of the interaction effect of *Fixed income* and bear markets in the *Change in choice* regression is significant and returns the expected positive sign,

however this is not the case in the *Capital inflow* regression. The coefficient of the interaction effect of *Sigma* and the bear market dummy however demonstrates a significant and expected negative sign for both dependent variables. We also test the opposite combination of asset classes by including *Equity* and *Sigma* in the same regression, demonstrated in regression 6, Table 9-10. The result from this regression supports our hypothesis. In both regressions *Sigma* and *Equity* multiplied with the market state dummy demonstrate negative and significant coefficients, this is in line with our hypothesis and expectations. We also include both asset types and *Sigma* in a regression. The result from this regression is seen in Table 9-10, regression 7. The *Sigma* in the bear state is positive for *Capital inflow* and negative for the *Change in choice* regression, making it hard to draw any conclusions. None of the asset types in the bear state are returning any significant coefficients.

When last analyzing our full model we see that the *Sigma* in bear state is negative and significant. This is the case in both regressions this is documented in Table 22-23 regressions 1-2.

To summarize the results from our tests and regressions we can conclude that we find support for our first hypothesis. Strong evidence pointing in the direction of investors favouring safe assets in bear states are given by the Wilcoxon tests performed as well as the overview of the assets. These results contribute to the results of Gidolin and Timmermann (2004) as well as Wenger and Weller (2002) who find that investors maximize utility by changing allocations when considering different market states. Results from the regressions also support these findings. The most substantial support is found in the significant *Sigma* interaction effects, having a negative relation to both *Change in Choice* and *Capital inflow* in bear markets. High risk funds will experience lower capital inflow and selections in bear markets compared to non bear states. The significant *Sigmas* contradict the results of Engström and Westerberg (2004) who cannot find any significant relationship between sigma and fund investment. The significant *Fixed income* interaction coefficients all show the same investor preference; favouring of fixed income in bear markets. Furthermore, the favouring of fixed income contradicts Engström and Westerberg's (2004) findings of investors being risk tolerant when it comes to choosing fund types. Based on above results we cannot reject our hypothesis, thus we conclude that investors will favour safer assets in bearish market conditions.

Hypothesis 2

Management fee sensitivity is exaggerated in bull and bear market states.

We begin to test our second hypothesis by regressing *Management fee* with the dummy for a bear state, this is performed for both dependent variables. In Table 11, regression 1, we see that

management fee multiplied with the bear dummy give significant results for the *Change in choice* regression. The coefficient is negative. The negative relationship indicates that investors are more fee sensitive and put weight on the aspect of management fees when selecting funds in bear states compared to a more stable market or a growing market. The *Capital inflow* regression does also prove to support that management fees have a more negative relationship to investments in a fund in bear markets, seen in Table 12, regression 1. We further regress *management fee* interacted with a dummy for bull markets as well. The regression is demonstrated below.

$$Capital\ inflow_{i,t} = \alpha_0 + \beta_1 X_{i,t} + \gamma_1 Dummy_{bear,t} + \gamma_2 Dummy_{bull,t} + \delta_1 X_{i,t} Dummy_{bear,t} + \delta_2 X_{i,t} Dummy_{bull,t} + \theta_1 Total\_funds_t + \vartheta_1 Total\_Capital\_inflow_t + \varepsilon_{i,t}$$

$$Change\ in\ choice_{i,t} = \alpha_0 + \beta_1 X_{i,t} + \gamma_1 Dummy_{bear,t} + \gamma_2 Dummy_{bull,t} + \delta_1 X_{i,t} Dummy_{bear,t} + \delta_2 X_{i,t} Dummy_{bull,t} + \theta_1 Total\_funds_t + \vartheta_1 Total\_change\_in\_choice_t + \varepsilon_{i,t}$$

The results from the regression demonstrate that the coefficient for the interaction effect of fees and bull market is significant, and positive. This is the case for the *Change in choice* regression only, seen in Table 11, regression 2. The positive significance is surprising, indicating that investors would prefer high fee funds in a bull market. The coefficient for a bear market is not significant. Insignificance is also something we see for the *Capital inflow* regression for both market dummies.

In the full regression model none of the regression models return a significant coefficient for management fee in bear markets as seen in Table 22 and 23, regressions 1-2.

Summarizing the implications of these results we contribute to the results of Engström and Westerberg (2004), by finding support for management fee having a negative relationship to capital inflow. This is also in line with the results suggested by Kemp and Ruenzi (2004) that claim to see a negative relationship to management fee and fund growth, note though that our coefficient is for the bear state while they examine an entire period of both ups and downs. While finding support for the fact that management fee has an impact on fund selection in bear states, we cannot conclude that this is in fact the case for bull markets. Thus, we reject the hypothesis of management fee sensitivity being exaggerated in bull and bear states. Rather we find higher sensitivity in bear states only, while bull markets demonstrate the opposite relationship.

Hypothesis 3

Investors favour domestic assets more in bear periods.

To examine whether investors favour domestic assets in bear periods we first study if there is a difference of the change in capital inflow to funds and selection of funds with domestic or foreign focuses in bull and bear periods respectively. This is performed through the Wilcoxon rank-sum test. As demonstrated in Table 13 there are significant differences for both capital inflow and selection of funds between the different market states. We see that domestic assets will be held to a larger extent in bear periods than in bull. The tests for foreign assets show two fold results. For C*apital inflow* we see that foreign assets will be preferred more in a bull market. *Change in choice*, on the other hand, indicates that foreign assets will be preferred in bear market to a larger extent than in bull periods. Furthermore, in Table 14 we also identify a significant difference between investments in foreign and domestic focuses in bear periods. This points to that there is difference between bull and bear periods and that PPM savers tend to invest in funds with domestic focus instead of foreign in bear periods.

An additional approach to determine investors' preference to domestic investments in bear periods is to examine whether there is a difference in investment preference depending on where the fund is based. From Table 15 it is seen that we cannot find any clear support for our hypothesis. Although there are significant differences for fund selection between bull and bear periods it is not apparent whether PPM savers choose domestic or foreign based funds as the dependent variables demonstrate split results. Moreover, when we test if there is a difference between preferring foreign and domestic based funds in bull and bear states individually, savers tend to favour foreign based funds in bear periods. This can be seen in Table 16. These results suggest that PPM savers favour funds with a foreign base but also funds with domestic focuses in bear periods.

To find further support to the analysis we run regressions on the two dependent variables and the interaction effect of each explanatory variable alone and the bear market dummy. Our first regression tests the significance of a domestic focus in a bear state. Neither regression shows any significance as seen in Table 17-18, regression 1. This is also the case for the regressions on funds being based domestically as we see in regression 2. In a regression with both domestic focus and domestic base, there is again no significant difference for capital inflow and selection of funds in the bear state compared to other market states, seen in regression 3.

We turn the analysis to a foreign perspective and run regressions with foreign explanatory variables, first separate and then combined, all found in Table 17-18, regressions 4-6. In our regression on foreign focus in bear markets we find no significant difference in neither C*apital inflow* or *Change in choice* between

foreign focus in bear states and other states. When we run the same regression for fund base the same results are found. Furthermore, both foreign base and focus is tested together, again no significance can be found for the difference of preference in a bear state. The results imply that PPM savers do not change their selection or capital inflow to funds with foreign base or foreign focus when the market is in a bear state. The insignificance all through our regressions points to the fact that investors do not seem to give much attention to the information communicated about domestic focus and base of a fund compared to a non bearish market. From hypothesis 1 we learned that the type of fund is important for investors within the PPM system. The insignificance of the regressions containing geographic information and the significance of the regressions including fund types indicate that investors give attention to fund information regarding type, not the investment focus or base.

We further test domestic base and focus in a larger context together with other explanatory variables in bear periods documented in Table 22-23, regression 2, it is demonstrated that no significance can be found regarding geography. The same insignificant results are found for foreign focus and foreign based funds as seen in regression 1 in the same table.

Summarizing our results it is clear from the Wilcoxon tests that domestic focused assets are preferred in bear periods both when compared to the bull state and in the comparison within the state against foreign funds. This supports the findings of French and Poterba (1991) about investors being home biased. With these results we also contribute to Schultz findings (2002) of that investors tend to have a preference for a less geographical spread portfolios in bear markets. Thus so far our hypothesis is supported. The results from testing the domestic base of the funds are a bit more ambiguous. Furthermore, our insignificant regressions indicate on no geographical preferences in bear states compared to all other states of the market, which point to the fact that there are no differences in preferences between different market conditions. The different results of the Wilcoxon rank-sum tests and regressions can be explained by that there are significant differences when comparing bull and bear states as the test does, while there are no differences when comparing bear to all other states as the regressions do. Thus we reject the hypothesis of investors being more home biased in bear periods.

Hypothesis 4

Investors favour funds with low past returns to higher degree in bear periods.

To initiate our analysis of the preference for low or high returning funds we use the Wilcoxon rank-sum test to get a descriptive overview. Table 19 demonstrates a significant difference in *Change in choice* for low performing funds between bull and bear periods, indicating that PPM savers favour low performing funds in bear periods compared to bull periods. However, when we study the *Capital inflow* test we find

that this significance of the test statistic does not remain. In the same table we also present the results for top performing funds. The same results as for the test of the lowest percentile group occur. *Change in choice* return a significant test statistic, while *Capital inflow* does not. Thus our results are contradicting, indicating that investors will increase selection in low performing funds in bear periods, but also increase the selection of high performing funds.

To further evaluate the hypothesis and in order to determine past return's influence on fund popularity in bear periods we first examine top performing funds through a regression analysis. As can be seen in Table 20-21, regression 2, the coefficient is not significant in the bear state for either dependent variable. Thus top performing funds are not favoured in bear markets. This indicates that investors might believe that the expected returns of these funds will soon start to decline due to their past high values. When analyzing the funds in the lowest percentile presented in Table 20-21, regression 1, the results are similar to the results to *Top*. No significance can be ascribed to the explanatory variable we want to investigate. Last we combine both *Low* and *Top* and the bear market dummy. This is demonstrated in Table 20-21, regression 3. Again no significance can be found.

Evaluating the ambiguous results from the Wilcoxon tests and insignificant coefficients in the regressions we cannot find support for our hypothesis. This is contradicting to our expectations that individuals are contrarian investors in line with Odean (1998) and that this behaviour should be exaggerated in bear markets as investors could expect mean reverting returns. Our results, on the other hand, suggest that neither investment strategy is changed in bear periods compared to other periods. Individual investors do not take into account the significant implications from down and up phases in the market found by Cooper and Gutirrez (2004) for momentum strategies, which on the other hand was proven for six month strategies which our data do not capture. A possible reason for these results is that individuals put little emphasis into the information given regarding fund returns and therefore do not change their preferences in bear states, this however is contradicting to the findings of Engström and Westerberg (2004).

Hypothesis 5

Women show a higher degree of risk aversion in bear states than men.

To test above gender hypothesis we begin by using Wilcoxon rank-sum test to describe the different investment schemes for men and women. In Table 24 the test is shown for women and men respectively. The results of the tests are similar for men and women. Hence, both genders allocate towards fixed income to a higher degree in bear states compared to bull. This is the case for both the *Capital inflow*- and *Change in Choice* variable. Men and women also act in the same way when examining the favouring of equity. The *Capital inflow* variable for stocks will be lower in the bear states indicating that the holding of

stocks is higher in bull markets. However the *Change in choice* proves the opposite relationship, with the number of investors choosing equity funds being larger in bear than in bull periods. It should be pointed out that the same tendencies apply for both men and women.

When we furthermore perform a test to study if the similarities are also found in a comparison of equity and fixed income funds in bull and bear market conditions we get similar results for the sexes, seen in Table 25. The probability of holding a more equity than fixed income is below 30% for both men and women. Based on these results no difference in allocation or risk aversion can be ascribed the genders. This contradicts Barber and Odean (2001) and Sundén and Surette (1998), who find differences in male and female investor behaviour.

To further asses if there is a difference differences between men and women we run regressions regarding fixed income and equity funds. From a first glance at Tables 26-29, we find few differences between the genders in significant variables.

The few observed differences regarding *Equity* compared to *Fixed income* are firstly that equity funds have a significant and negative effect for *Change in Choice* for men in bear periods but not for women as can be seen in regression 1, in Table 26. This indicates that men are more reluctant to equity funds in bear periods compared to other states while women demonstrate no significant difference. This result is surprising with respect to our hypothesis. *Fixed income*, on the contrary, has a positive and significant sign for women in bear periods, as seen for regression 2 and 6 in Table 28 in the C*hange in choice* regression. For the *Capital inflow* variable only regression 2 in Table 29 demonstrates a positive and significant coefficient. This indicates that women prefer fixed income more in bear periods, while men do not. In regression 5, Table 28-29 we again find that *Fixed income* is positive in bear periods for women, implying that women prefer fixed income funds in bear periods while there is no significant difference for men.

In order to test for statistical differences between men and women we use suest test (UCLA) and compare each variable regarding risk for both *Capital inflow* and *Change in Choice* in bear markets by testing if the difference of the coefficients between men and women are significantly different from 0. As can be observed in Table 31, no significant difference for C*apital inflow* is found for the coefficients between the sexes. This implies that there are no differences in investment behaviour in bear markets between men and women. However when turning to fund selection in Table 30 we find significant differences for *Fixed income* in regression 6, implying that women favour fixed income significantly more in bear periods than men.

Summarizing our results regarding difference in risk aversion between men and women in bear states little support can be found. The Wilcoxon tests demonstrate similar results for men and women, indicating no difference. Turning to regressions we find support to our hypothesis as women to a larger extent favour fixed income than men in bear states. However, when studying the significance tests only one coeffiecent is significantly different between men and women. Hence, we conclude that women do not demonstrate a higher degree of risk aversion than men in bear states in contrast to our hypothesis. This supports Clark and Pitts (1999), Schubert et al (1999), and Graham et al (2002) who do not find significant difference between the genders.

7. Conclusion

We provide new evidence on fund attributes attracting investors by examining the dynamics of net flows and selection in the mutual fund industry in a bear market regime. Our first finding is that investors in the PPM system favour safe funds to a higher degree in bear markets compared to other periods. Thus fixed income funds have received increased capital inflow and seen a growth in the selection in bearish markets compared to a non bear market state. Furthermore funds with a high risk level have had decreased capital inflow and number of choices in bear markets when comparing with a normal or bullish year. Second we find that investors are more sensitive to management fees in a bear market presence. Capital inflow and fund selection decrease, compared to a non bear year, if fees are increased. Last we cannot, compared to a non bearish market state, identify any gender differences in the risk aversion, support for increased home bias or investors adopting more contrarian investment schemes, under the presence of a bear market.

The notion of risk aversion is a possible explanatory factor to why we see an increase of capital flowing to fixed income funds in bear markets as well as an increased selection compared to non extreme markets. Arguing from a basis in prospect theory, we know that the market is more volatile in a bear state, hence investors faced with a large amount of risk will behave in a risk averse manner. This is also to some extent supported by past research on rebalancing and reallocation of portfolios in instable markets as bull and bear conditions. An enhanced sensitivity to management fees is possibly explained by rationality of investors and the beliefs in the efficient market hypothesis. One will not pay more when the payoff is not guaranteed to be higher.

8. Discussion

A discussion around the relevance of the data sample and model is appropriate. First of all we note that that the investment in the PPM system does not constitute the entire investment portfolio for the PPM

saver. This means that if we see a tendency of risk aversion this might not be the case for that particular investor since he or she could have a very high risk tolerance when combining the PPM investments with investments outside the PPM system.

Furthermore the definition of bull and bear markets can be discussed; this is especially the case for the bull state. In 2003 a dramatic increase can be seen in the stock market hence this might have been a reasonable year to characterize as bull state. The reason for not including 2003 and 2007 as bull years is that both years show contradicting performance. In the beginning of 2003 the stock market was in a clear down turn, rising to high levels by the end of the year. The opposite is true for 2007 where the market was on its high but declined towards the end of the year. Since we only have yearly data it is hard to characterize these years properly. Monthly data would have been a better option to be able to capture the fast turns of the stock market.

Another limitation is that the bear market dummy experience multicollinearity when entered alone into the regression. This might cause spurious results of the regressions and thus our results.

Last we like to point out the fact that little variance in our independent variables can cause some disturbance of the interpretation of our regressions. The most obvious example of this is the management fees which have not experienced large changes during the period, thus this might decrease some of its explanatory power. The same apply for little changes in the dependent variable. However this we control for with our control variable.

9. Further Research

One interesting approach to further investigate is how investor's attraction of funds would change with different variables. This could for example be providing PPM investors with information on if the fund focus is on value stocks or growth stock and if the popularity of these funds would change in bull and bear states. Furthermore, another advance to this field of research would be to compare institutional and individual behaviour under bull and bear regimes. One could build on, but still contribute with a new angle, on the already comprehensive research on the comparison of institutional and individual investor investment strategies. More interesting aspects in the line of comparison would be to look at the difference in behaviour based on investor wealth.

Additionally it would be interesting to analyze the group of people that choose the default option and their reasoning for not investing actively. This has, to some extent, been investigated however this has not been looked upon for the entire PPM life time, 2000-2009. Hence it would be interesting to see how and if investors to a larger extent have shifted to or from an active investment option and the reason underlying

that. A more qualitative approach could also be taken in the same line of reasoning. One could investigate how pension savers in Sweden would act if a risk free option would be given them in this context. More specifically investigate if this would increase their preference for an active investment and investigate what factors that would make them interested in investing actively. Yet another interesting line of research would be to test if any herd behaviour can be seen within the investor community.

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Appendix

Graph 1 OMX index 2000-2009

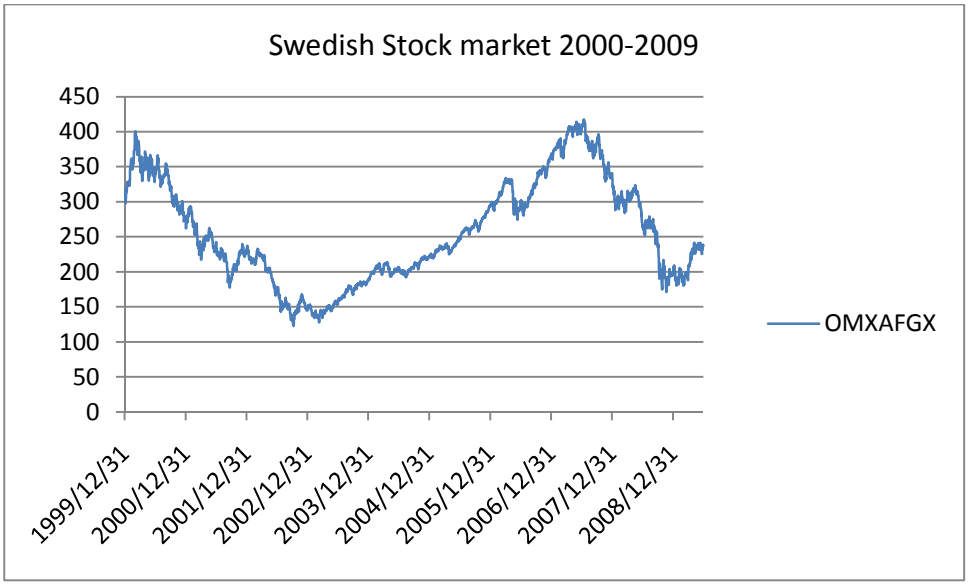

Table 1 Swedish Stock market index, Affärsvärldens general index.

Table 1 Description of variables

Variable	Variable name	Description
Total value	TNA	Total value of investments to a fund at year end
Total value Men	men_value	Total value of men's investments to a fund at year end
Total value Women	wom_value	Total value of women's investments to a fund at year end
Number of investors	total_choice	Total number of investors to a fund at year end
Number of men	men_choice	Total number of male investors to a fund at year end
Number of Women	wom_choice	Total number of female investors to a fund at year end
Capital inflow	flow_money	Increase in value of investments in a fund less return
Capital inflow men	menflow	Increase in value of men's investments in a fund less return
Capital inflow women	womflow	Increase in value of women's investments in a fund less return
Change in choice	flow_choice	Increase in number of investors to a fund
Change in choice men	menchoice	Increase in number of male investors to a fund
Change in choice women	womchoice	Increase in number of female investors to a fund
Fixed Income	type_fix	Dummy
Equity	type_stock	Dummy
Sigma	normsigma	Normalized with average sigma within asset class
Management fee	Mfee	In percent
Low	Low	Dummy
Top	Top	Dummy
Based foreign	based_for	Dummy
Based domestic	based_swe	Dummy
Domestic focus	geo_swe	Dummy
Foreign focus	ForFocus	Dummy
Dummy bear	Dummy_bear	Dummy
Dummy bull	Dummy_bull	Dummy
	DbearFix	Interaction of Dummy bear and Fixed Income
	DbearStock	Interaction of Dummy bear and Equity
	Dbearnorms~a	Interaction of Dummy bear and Sigma
	DbearMfeepc	Interaction of Dummy bear and Management fee
	DbearLow	Interaction of Dummy bear and Low
	DbearTop	Interaction of Dummy bear and Top
	DbearFor	Interaction of Dummy bear and Based foreign
	DbearForFo	Interaction of Dummy bear and Foreign focus
	Dbeargeo_swe	Interaction of Dummy bear and Domestic focus
	DbearSwe	Interaction of Dummy bear and Based domestic
Total Change in Choice	totTC	Total percentage increase each year of number of investors in the system
Total Change in Choice men	totMENchoi~c	Total percentage increase each year of number of male investors in the system
Total Change in Choice women	totWOMchoi~c	Total percentage increase each year of number of female investors in the system
Total Capital inflow	totflow	Total percentage increase each year of capital inflow to the system
Total Capital inflow men	totMENflowpc	Total percentage increase each year of capital inflow from men to the system
Total Capital inflow women	totWOMflowpc	Total percentage increase each year of capital inflow to the system
Total funds	noFunds	Number of funds each year

Table 2 Data Descriptives of Dependent Variables 2001-2008

Variable	2001	2002	2003	2004	2005	2006	2007	2008
TNA	443	544	545	574	646	677	715	694
(MSEK)	*104*	*72*	*117*	*146*	*207*	*275*	*305*	*234*
total_choice	443	544	545	574	646	677	715	694
	23205.15	*18258.75*	*18812.66*	*17819.21*	*15975.59*	*15283.96*	*14755.23*	*15114.87*
flow_money	442	526	539	574	646	656	681	693
	.5310559	*.9958223*	*2.728464*	*2.574176*	*2.987328*	*1.096877*	*2.299932*	*1.895049*
flow_choice	443	544	545	574	646	677	715	694
	.2570707	*1.115514*	*1.090238*	*1.491748*	*1.693212*	*.6537218*	*1.365445*	*1.814317*
men_value	443	543	543	571	645	677	713	690
(MSEK)	*58,2*	*40,3*	*65,3*	*81,5*	*115*	*153*	*171*	*129*
men_choice	443	543	543	571	645	677	713	690
	11637.02	*9160.926*	*9464.033*	*8984.795*	*8034.961*	*7686.064*	*7458.647*	*7597.855*
menchoice	443	543	543	571	645	677	713	690
	.254004	*.8270838*	*.9104056*	*.927782*	*1.18945*	*.5491048*	*1.180402*	*.9618653*
menflow	442	525	537	571	645	656	679	689
	.534317	*.9600889*	*2.448295*	*1.583302*	*2.35798*	*.9968271*	*1.994461*	*1.243951*
wom_value	443	540	539	570	635	675	708	688
(MSEK)	*45,3*	*32,1*	*52,1*	*65,2*	*93*	*122*	*136*	*105*
wom_choice	443	540	539	570	635	675	708	688
	11568.12	*9181.574*	*9487.547*	*8941.377*	*8080.32*	*7618.804*	*7377.038*	*7502.753*
womchoice	443	540	539	570	635	675	708	688
	.2679347	*.7447412*	*.8077719*	*1.229774*	*.9978363*	*.6102605*	*1.059046*	*.8930883*
womflow	442	522	533	570	635	654	675	687
	.538657	*1.038016*	*2.486246*	*2.168081*	*2.242979*	*1.406671*	*1.690031*	*1.172457*

Table 2 Demonstrate 12 variables' observations and mean values in italics for each year 2001-2008.

Table 3 Data Descriptives of Independent and Control Variables 2001-2008

Variable	2001	2002	2003	2004	2005	2006	2007	2008
normsigma	269	348	413	520	573	589	601	639
	1.819559	*1.397616*	*1.347552*	*1.434488*	*1.238501*	*.8812087*	*.9032183*	*1.23344*
Mfee	443	533	543	566	646	677	714	693
	.9746781	*1.179737*	*1.173849*	*1.151237*	*1.144272*	*1.149483*	*.5782913*	*.5796681*
totflow	443	544	545	574	646	677	715	694
	.2380353	*-.1163777*	*.5770268*	*.3210342*	*.5862347*	*.4039963*	*.1721379*	*-.2397076*
totTC	443	544	545	574	646	677	715	694
	.0310955	*.0034819*	*-.0037879*	*-.0021404*	*.0074056*	*.011976*	*.0223163*	*.009656*
totMENchoicepc	443	543	543	571	645	677	713	690
	.0284259	*.0032244*	*-.0035775*	*-.0018526*	*.009427*	*.0138582*	*.02326*	*.0099969*
totMENflowpc	443	543	543	571	645	677	713	690
	.2292932	*-.1222215*	*.5749838*	*.3149306*	*.5915779*	*.4026651*	*.1748932*	*-.2498863*
totWOMchoicepc	443	540	539	570	635	675	708	688
	.0337978	*.0037411*	*-.0039997*	*-.0024301*	*.0053692*	*.0100721*	*.0213581*	*.0093093*
totWOMflowpc	443	540	539	570	635	675	708	688
	.2494772	*-.1088526*	*.5796182*	*.328753*	*.5795479*	*.4056749*	*.168671*	*-.2268313*
noFunds	443	544	545	574	646	677	715	694

Table 3 Demonstrate 9 variables' observations and mean values in italics for each year 2001-2008.

Table 4 Data Descriptives of Dummy Variables 2001-2008

Variable	2001	2002	2003	2004	2005	2006	2007	2008
Fixed income	60	81	90	104	108	109	110	101
Equity	298	376	376	399	461	494	526	517
Low	148	181	182	192	216	226	238	231
Top	149	172	181	196	220	207	207	233
Based foreign	223	303	298	323	375	398	427	395
Based domestic	220	241	247	251	271	279	288	299
Foreign focus	286	336	340	380	428	461	495	467
Domestic focus	74	80	88	100	104	110	112	119

Table 4 Demonstrate the number of occurrences when the value of the dummy is equal to 1 for 8 dummy variables for each year 2001-2008.

Table 5 Data Variance inflation factor test

Variable	VIF	1/VIF
Dummy_bear	16.86	0.059306
DbearStock	8.60	0.116342
Dbearnormsigma	7.40	0.135161
DbearMfeepc	6.23	0.160516
DbearForFo	4.37	0.228793
DbearFor	4.00	0.250274
DbearFix	3.25	0.307780
type_stock	3.15	0.317296
type_fix	3.11	0.321225
normsigma	2.82	0.355220
DbearLow	2.64	0.378117
DbearTop	2.59	0.386166
based_for	2.24	0.445822
Mfee	2.14	0.467340
Low	1.93	0.517000
Top	1.93	0.517958
ForFocus	1.81	0.553585
noFunds	1.59	0.630501
totTC	1.35	0.738771
Mean VIF	4.11	

Table 5 OLS regression on Change in choice. 18 variables of which 2 control variables.

Table 6 Data Variance inflation factor test

Variable	VIF	1/VIF
Dummy_bear	21.77	0.045929
DbearStock	8.63	0.115826
Dbearnormsigma	6.88	0.145327
totflow	6.29	0.159005
DbearMfeepc	6.15	0.162674
DbearForFo	4.37	0.228710
DbearFor	3.92	0.255360
DbearFix	3.28	0.305274
type_stock	3.15	0.317147
type_fix	3.11	0.321365
normsigma	2.69	0.371657
DbearLow	2.65	0.376950
noFunds	2.64	0.378986
DbearTop	2.60	0.384296
based_for	2.21	0.451983
Mfee	2.09	0.478486
Low	1.95	0.513496
Top	1.95	0.514063
ForFocus	1.81	0.551616
Mean VIF	4.64	

Table 6 OLS regression on Capital Inflow. 18 variables of which 2 control variables.

Table 7 Wilcoxon rank-sum test

		Bull		Bear		Result		
		Mean	Median	Mean	Median	z	Prob > |z|	Bear>Bull
Fixed income	Capital inflow	1.630609	.2277899	3.355626	.5820296	7.371	0.0000***	0.683
	Change in choice	.5329595	-.0089659	3.037358	.3071819	9.962	0.0000***	0.745
Equity	Capital inflow	2.61867	.2148643	.8364339	.2468239	-3.203	0.0014***	0.463
	Change in choice	1.621624	-.0247806	.7404873	.0148564	3.458	0.0005***	0.540

Table 7 Comparison of preference of fixed income under bull and bear market regimes, and equity under bull and bear market regimes. Presenting the mean and median of Change in Choice and Capital inflow, the statistica of the test (z), the p-value of the test and the probability of an investor choosing the fund in bear markets.

Table 8 Wilcoxon rank-sum test

	Bull			Bear		
	z	Prob > |z|	Equity>Fixed Income	z	Prob > |z|	Equity>Fixed Income
Capital inflow	0.313	0.7544	0.506	-11.435	0.0000***	0.266
Change in choice	-0.706	0.4804	0.487	-12.747	0.0000***	0.240

Table 8 The table compares preference of fixed income or equity under bull and bear market regimes. It presents the statisticao f the test (z), the p-value of the test and the probability of an investor choosing/investing in an equity fund for both Capital inflow and Change in Choice.

Table 9 Regression analysis

Variable	(1)		(2)		(3)		(4)		(5)		(6)		(7)	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
type_fix	.0256048	.3869424			.9355905	.3638867			.0793264	.2886396			.6096603	.2957627
	0.947				*0.010***				*0.783*				*0.039***	
Dummy_bear	-.0369023	.310569	1.795231	.812946	1.616193	.9130538	1.348405	.4619839	1.245886	.4685481	3.126595	1.152255	3.161453	1.560211
	0.905		*0.027***		*0.077**		*0.004****		*0.008****		*0.007****		*0.043***	
totTC	-24.04223	9.431958	-26.37173	9.831342	-25.5848	9.801539	-5.699278	8.514621	-3.852316	8.512552	-6.150402	8.704486	-5.022114	8.972893
	0.011**		*0.007****		*0.009****		*0.503*		*0.651*		*0.480*		*0.576*	
noFunds	.0037777	.0015247	.0040884	.0016248	.0038975	.0015594	.0036348	.0014395	.0035414	.0014049	.0036658	.0014561	.0036628	.0014096
	*0.013***		*0.012***		*0.012***		*0.012***		*0.012***		*0.012***		*0.009****	
DbearFix	2.125443	1.148513			.4868538	1.391937			1.912026	1.152767			.0979233	1.703653
	*0.064**				*0.727*				*0.097**				*0.954*	
_cons	-.963491	1.009351	-1.511825	1.001438	-1.937757	.9868769	-2.339163	.9900018	-2.328148	1.02119	-2.514239	.970404	-2.934898	1.017949
	0.340		*0.131*		*0.050***		*0.018***		*0.023***		*0.010***		*0.004****	
type_stock			.5223577	.2857116	1.063757	.2240969					.2592762	.2167104	.615469	.1996643
			*0.068**		*0.000****						*0.232*		*0.002****	
DbearStock			-2.107539	.7674065	-1.942819	.8952691					-2.168579	.9252502	-2.135857	1.36732
			*0.006****		*0.030***						*0.019***		*0.118*	
normsigma							.6979505	.2145259	.7154543	.2328469	.6755734	.2189115	.7242494	.2341222
							*0.001****		*0.002****		*0.002****		*0.002****	
Dbearnorms							-.7473453	.2644458	-.8919886	.2904139	-.8895739	.2963227	-.9497955	.3033864
							*0.005****		*0.002****		*0.003****		*0.002****	

Table 9 Reports OLS regression coefficients and p-values in italics for 7 regressions. The dependent variable is Change in Choice. The independent variables are Fixed income, Equity and Sigma. These are also interacted with Bear. Control variables are Total Change in Choice and Number of funds. Estimation technique: Robust regression.

Table 10 Regression analysis

Variable	(1)		(2)		(3)		(4)		(5)		(6)		(7)	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
type_fix	.7972497	.754892			2.212764	.7097928			.62975	.5985723			1.541568	.5877567
	0.291				*0.002****				*0.293*				*0.009****	
Dummy_bear	-1.147817	1.157952	.3488508	1.454744	.5584063	1.382804	2.230748	1.034357	2.321274	.9973666	3.763342	1.452184	4.053238	1.735628
	0.322		*0.810*		*0.686*		*0.031****		*0.020***		*0.010***		*0.020***	
totflow	.1183014	1.920298	.0823739	1.920783	.123082	1.918835	2.008494	1.605046	2.092983	1.601904	2.02308	1.603664	2.083682	1.60237
	0.951		*0.966*		*0.949*		*0.211*		*0.191*		*0.207*		*0.194*	
noFunds	.0015557	.0040009	.0016948	.004036	.001503	.0040296	.0065708	.0031185	.0067958	.0031016	.0066138	.0031036	.0068097	.0031057
	0.697		*0.675*		*0.709*		*0.035***		*0.029***		*0.033***		*0.028***	
DbearFix	1.665111	1.22366			.0415155	1.386939			1.558666	1.08797			.1009685	1.557596
	0.174				*0.976*				*0.152*				*0.948*	
_cons	1.146198	3.269735	.9303954	3.31595	.2378916	3.25456	-4.823813	2.54907	-5.193136	2.517966	-4.957257	2.619202	6.131701	2.642509
	0.726		*0.779*		*0.942*		*0.059**		*0.039***		*0.058**		*0.020***	
type_stock			.376851	.5245554	1.651192	.3517222					.1574014	.4133524	1.054365	.2993426
			0.473		*0.000****						*0.703*		*0.000****	
DbearStock			-1.803467	.8010747	2.003706	.807616					-1.834605	.8543529	1.940925	1.217813
			*0.024***		*0.013***						*0.032***		*0.111*	
normsigma							1.139681	.3477978	1.214857	.3782081	1.128781	.3533772	1.237582	.3811563
							*0.001****		*0.001****		*0.001****		*0.001****	
Dbearnorms							-1.095666	.3814301	-1.297398	.4033848	-1.230453	.3960132	1.352507	.4158555
							*0.004****		*0.001****		*0.002****		*0.001****	

Table 10 Reports OLS regression coefficients and p-values in italics for 7 regressions. The dependent variable is Capital inflow. The independent variables are Fixed income, Equity and Sigma. These are also interacted with Bear. Control variables are Total Capital Inflow and Number of funds. Estimation technique: Robust regression.

Table 11 Regression analysis

Variable	(1)		(2)	
	Coef.	Std. Err.	Coef.	Std. Err.
Mfee	.736004	.2991544	-.0512964	.3048196
	*0.014***		*0.866*	
Dummy_bear	1.028345	.5577106	.2390873	.6139054
	*0.065**		*0.697*	
totTC	-15.82021	8.782256	-24.82267	8.791196
	0.072*		*0.005***	
noFunds	.00439	.0014243	.0036672	.0014583
	*0.002****		*0.012***	
DbearMfeepc	-.785685	.4416193	-.0556055	.4602415
	*0.075**		*0.904*	
_cons	-2.165563	.963119	-.7868843	1.050129
	*0.025***		*0.454*	
Dummy_bull			-1.429523	.5888647
			*0.015***	
DbullMfeepc			1.188771	.5532617
			*0.032***	

Table 11 Reports OLS regression coefficients and p-values in italics for 2 regressions. The dependent variable is Change in Choice. The independent variable is Management fee. This is also interacted with Bear and Bull. Control variables are Total Change in Choice and Number of funds. Estimation technique: Robust regression.

Table 12 Regression analysis

Variable	(1)		(2)	
	Coef.	Std. Err.	Coef.	Std. Err.
Mfee	1.188155	.4155612	.5382835	.5871586
	*0.004***		*0.359*	
Dummy_bear	-.1376694	1.226132	-.6040071	1.279994
	0.911		*0.637*	
totflow	-.7502402	1.911861	.1093934	2.068539
	0.695		*0.958*	
noFunds	.0013648	.004191	.0019609	.0043507
	0.745		*0.652*	
DbearMfeepc	-1.179738	.5134135	-.5642421	.6947772
	*0.022***		*0.417*	
_cons	.5324144	3.435349	.7458347	3.488948
	0.877		*0.831*	
Dummy_bull			-1.71658	.8772729
			*0.050***	
DbullMfeepc			1.100319	.8220343
			0.181	

Table 12 Reports OLS regression coefficients and p-values in italics for 2 regressions. The dependent variable is Capital inflow. The independent variable is Management fee. This is also interacted with Bear and Bull. Control variables are Total Capital Inflow and Number of funds. Estimation technique: Robust regression.

Table 13 Wilcoxon rank-sum test

		Bull		Bear		Result		
		Mean	Median	Mean	Median	z	Prob > |z|	Bear>Bull
Domestic	Capital inflow	1.437619	.2249614	1.23086	.3418828	2.038	0.0415**	0.549
	Change in choice	1.121823	-.0023074	1.237308	.0468663	3.755	0.0002***	0.590
Foreign	Capital inflow	2.229752	.2213788	1.225816	.2582144	-3.394	0.0007***	0.458
	Change in choice	1.234478	-.00307	1.230639	.027674	2.529	0.0114**	0.531

Table 13 Comparison of preference of funds with foreign and domestic focus under bull and bear market regimes. Presenting the mean and median of Change in Choice and Capital inflow, the statisticao of the test (z), the p-value of the test and the probability of an investor choosing the fund in bear markets.

Table 14 Wilcoxon rank-sum test

	Bull		Bear	
	Capital inflow	Change in choice	Capital inflow	Change in choice
z	0.329	-1.600	-3.994	-3.022
Prob > |z|	0.7418	0.1097	0.0001***	0.0025***
For>Dom	0.506	0.471	0.421	0.441

Table 14 The table compares preference of funds with foreign focus and domestic focus under bull and bear market regimes. It presents the statistica of the test (z), the p-value of the test and the probability of an investor choosing/investing in a fund with foreign focus for both Capital inflow and Change in Choice.

Table 15 Wilcoxon rank-sum test

		Bull		Bear		Result		
		Mean	Median	Mean	Median	z	Prob > |z|	Bear>Bull
Domestic	Capital inflow	1.07735	.2048893	.762635	.2471065	-0.087	0.9306	0.499
	Change in choice	.6486479	-.0245613	.7170188	.0100923	4.891	0.0000***	0.572
Foreign	Capital inflow	3.014639	.2320309	1.656155	.3320703	0.713	0.4758	0.509
	Change in choice	1.709015	-.0159437	1.558006	.0631484	6.401	0.0000***	0.583

Table 15 Comparison of preference of funds with foreign and domestic base under bull and bear market regimes. Presenting the mean and median of Change in Choice and Capital inflow, the statistica of the test (z), the p-value of the test and the probability of an investor choosing the fund in bear markets.

Table 16 Wilcoxon rank-sum test

	Bull		Bear	
	Capital inflow	Change in choice	Capital inflow	Change in choice
z	1.400	-0.224	4.637	6.529
Prob > |z|	0.1616	0.8224	0.0000***	0.0009***
For>Dom	0.519	0.497	0.566	0.592

Table 16 The table compares preference of funds with foreign base and domestic base under bull and bear market regimes. It presents the statistica of the test (z), the p-value of the test and the probability of an investor choosing/investing in a fund with foreign base for both Capital inflow and Change in Choice.

Table 17 Regression analysis

Variable	(1)		(2)		(3)		(4)		(5)		(6)	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
geo_swe	.04156	.4603707			.6364359	.4306251						
	0.928				*0.139*							
Dummy_bear	.2694068	.3586008	.2760756	.4774984	.274026	.477525	.2058466	.5231924	.2943622	.3893945	.2287162	.5327321
	0.453		*0.563*		*0.566*		*0.694*		*0.450*		*0.668*	
totTC	-24.54807	9.429458	-24.37713	9.366504	-24.30868	9.33945	-24.60559	9.382724	.2943622	.3893945	-24.04901	9.327028
	*0.009****		*0.009****		*0.009****		*0.009****		*0.450*		*0.01****	
noFunds	.0038258	.0015402	.0036242	.0015341	.0035716	.001513	.0038072	.0015442	.0036242	.0015341	.0036542	.0015347
	*0.013***		*0.018***		*0.018***		*0.014***		*0.018***		*0.017***	
Dbeargeo_swe	.0283163	.8486078			-.0151812	.7911965						
	0.973				*0.985*							
_cons	-.9926058	1.00235	-.5217251	1.021815	-.5033337	1.010124	-1.006935	1.037661	-1.317858	.9839796	-1.191195	1.016345
	0.322		*0.610*		*0.618*		*0.332*		*0.181*		*0.241*	
based_swe			-.7961327	.2846949	-1.006494	.2383432						
			*0.005****		*0.000****							
DbearSwe			.0182866	.5255497	.0347205	.4426828						
			0.972		*0.937*							
ForFocus							.0501783	.3532241			-.3301669	.4086214
							0.887				*0.419*	
DbearForFo							.1054101	.5784206			.1433908	.5657387
							0.855				*0.800*	
based_for									.7961327	.2846949	.920192	.3372346
									*0.005****		*0.006****	
DbearFor									-.0182866	.5255497	-.0726094	.5067028
									0.972		*0.886*	

Table 17 Reports OLS regression coefficients and p-values in italics for 6 regressions. The dependent variable is Change in Choice. The independent variables are Domestic focus, Foreign focus, Based foreign, and Based domestic. These are interacted with Bear. Control variables are Total Change in Choice and Number of funds. Estimation technique: Robust regression.

Table 18 Regression analysis

Variable	(1)		(2)		(3)		(4)		(5)		(6)	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
geo_swe	-.1332567	.7640848			.9095932	.7089134						
	0.862				*0.200*							
Dummy_bear	-.9643565	1.194995	-1.173624	1.243802	-1.160503	1.244459	-.9336031	1.351488	-.5887899	1.216454	-.7195761	1.322624
	0.420		*0.345*		*0.351*		*0.490*		*0.628*		*0.586*	
totflow	.0749852	1.92098	.0848701	1.917703	.0975472	1.918097	.0775956	1.923112	.0848701	1.917703	.0782771	1.918017
	0.969		*0.965*		*0.959*		*0.968*		*0.965*		*0.967*	
noFunds	.0014648	.0039972	.001173	.0039809	.0011514	.0039788	.0014538	.0039972	.001173	.0039809	.0012381	.0039829
	0.714		*0.768*		*0.772*		*0.716*		*0.768*		*0.756*	
Dbeargeo_swe	.1085049	.9151522			-.3380101	.835953						
	0.906				*0.686*							
_cons	1.372089	3.266126	2.15095	3.264781	2.138838	3.263138	1.298454	3.3464	.6836646	3.284662	.9230792	3.332229
	0.674		*0.510*		*0.512*		*0.698*		*0.835*		*0.782*	0.012
based_swe			-1.467286	.4901287	-1.765191	.4175941						
			*0.003***		*0.000***							
DbearSwe			.5848341	.6153304	.7046519	.5292919						
			0.342		*0.183*							
ForFocus							.086833	.6368374			-.6138612	.7701291
							0.892				*0.425*	
DbearForFo							-.0163521	.7582098			.2836851	.8813444
							0.983				*0.748*	
based_for									1.467286	.4901287	1.697214	.6227798
									*0.003***		*0.006***	
DbearFor									-.5848341	.6153304	-.6934063	.7326784
									0.342		*0.344*	

Table 18 Reports OLS regression coefficients and p-values in italics for 6 regressions. The dependent variable is Capital inflow. The independent variables are Domestic focus, Foreign focus, Based foreign, and Based domestic. These are interacted with Bear. Control variables are Total Capital inflow and Number of funds. Estimation technique: Robust regression.

Table 19 Wilcoxon rank-sum test

		Bull		Bear		Result		
		Mean	Median	Mean	Median	z	Prob > |z|	Bear>Bull
Low	Capital inflow	2.695764	.2188414	1.032712	.3080924	0.349	0.7275	0.506
	Change in choice	1.567046	-.0192751	.9216842	.0272348	4.840	0.0000***	0.581
Top	Capital inflow	1.81097	.2090878	1.661845	.3038198	0.279	0.7800	0.505
	Change in choice	.8479382	-.0257278	1.449205	.0233591	4.695	0.0000***	0.579

Table 19 Comparison of preference of funds with Low and Top past returns under bull and bear market regimes. Presenting the mean and median of Change in Choice and Capital inflow, the statistica of the test (z), the p-value of the test and the probability of an investor choosing the fund in bear markets.

Table 20 Regression analysis

Variable	(1)		(2)		(3)	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Low	-.2762205	.2943846			-.3652894	.3557544
	0.348				*0.305*	
Top			-.0046972	.3141762	-.1845417	.3776416
			0.988		*0.625*	
DbearLow	.2038437	.5675782			.1052626	.698026
	0.720				*0.880*	
DbearTop			-.2490708	.5499418	-.1979173	.6795685
			0.651		*0.771*	
Dummy_bear	.2058907	.4058826	.3549874	.4377453	.3036454	.5987789
	0.612		*0.417*		*0.612*	
totTC	-24.55127	9.406097	-24.4445	9.424524	-24.53203	9.411142
	*0.009***		*0.010***		*0.009***	
noFunds	.0038257	.0015437	.0038261	.0015448	.0038133	.0015447
	*0.013***		*0.013***		*0.014***	
_cons	-.8935254	1.003044	-.9853833	1.016397	-.7967025	1.04057
	0.373		*0.332*		*0.444*	

Table 20 Reports OLS regression coefficients and p-values in italics for3 regressions. The dependent variable is Change in Choice. The independent variables are Low and Top. These are interacted with Bear. Control variables are Total Change in Choice and Number of funds. Estimation technique: Robust regression.

Table 21 Regression analysis

Variable	(1)		(2)		(3)	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Low	-.6204791	.5083545			-.5926101	.5927801
	0.222				*0.318*	
Top			.3493807	.5781724	.0575152	.6717124
			0.546		*0.932*	
DbearLow	.8231456	.6791822			.4922205	.8300446
	0.226				*0.553*	
DbearTop			-.9131765	.6650436	-.6714363	.8146982
			0.170		*0.410*	
Dummy_bear	-1.221059	1.137982	-.642302	1.290429	-.8812978	1.300984
	0.283		*0.619*		*0.498*	
totflow	.0749851	1.920924	.0831872	1.917048	.0897143	1.919329
	0.969		*0.965*		*0.963*	
noFunds	.0014774	.0040024	.0015159	.0040127	.0015084	.0040121
	0.712		*0.706*		*0.707*	
_cons	1.549458	3.204933	1.201941	3.348737	1.495866	3.277095
	0.629		*0.720*		*0.648*	

Table 21 Reports OLS regression coefficients and p-values in italics for 3 regressions. The dependent variable is Capital inflow. The independent variables are Low and Top. These are interacted with Bear. Control variables are Total Capital inflow and Number of funds. Estimation technique: Robust regression.

Table 22 Regression analysis

Variable	(1)		(2)	
	Coef.	Std. Err.	Coef.	Std. Err.
geo_swe			.4429792	.3942846
			0.261	
Dummy_bear	2.605971	1.352271	2.914978	1.73995
	*0.054**		*0.094**	
totTC	-2.912823	8.945908	-2.525899	8.93181
	0.745		*0.777*	
noFunds	.0051021	.0015243	.0052246	.0015295
	*0.001****		*0.001****	
Dbeargeo_swe			.2494107	.8066684
			0.757	
_cons	-3.950974	1.14533	-3.808876	1.152582
	*0.001****		*0.001****	
based_swe			-.512496	.1871022
			*0.006****	
DbearSwe			-.2286982	.5523934
			0.679	
ForFocus	-.2908685	.4147808		
	0.483			
DbearForFo	.2244736	.5860139		
	0.702			
based_for	.4746153	.2752574		
	*0.085**			
DbearFor	.0583815	.5491057		
	0.915			
type_fix	.4829047	.3149823	.3399628	.3523774
	0.125		*0.335*	
type_stock	.3947747	.1899331	.3166819	.1760307
	*0.038***		*0.072**	
normsigma	.6641489	.2294829	.7341611	.2491695
	*0.004****		*0.003****	
Mfee	.3146673	.2508793	.3167122	.2492329
	0.210		*0.204*	
Low	-.3033655	.2264885	-.305886	.2269984
	0.181		*0.178*	
Top	.1023867	.3379475	.0985157	.3397106
	0.762		*0.772*	
DbearFix	.2128785	1.716699	.0053008	1.840944
	0.901		*0.998*	
DbearStock	-2.470827	1.603376	-2.519374	1.652717
	0.123		*0.127*	
Dbearnorms~a	-.9804234	.319831	-1.02743	.3220668
	*0.002****		*0.001****	
DbearMfeepc	.6242171	.5965458	.6551176	.6082612
	0.295		*0.282*	
DbearLow	.606047	.6272992	.6286715	.6235228
	0.334		*0.313*	
DbearTop	.0277445	.6278232	.0646477	.635523
	0.965		*0.919*	

Table 22 Reports OLS regression coefficients and p-values in italics for 2 regressions. The dependent variable is Change in Choice. The independent variables are Fixed income, Equity, Sigma, Management fee, Based foreign, Based domestic, Foreign focus, Domestic Focus, Low, and Top. These are also interacted with Bear. Control variables are Total Change in Choice and Number of funds. Estimation technique: Robust regression.

Table 23 Regression analysis

Variable	(1)		(2)	
	Coef.	Std. Err.	Coef.	Std. Err.
geo_swe			.6584499	.8814341
			0.455	
Dummy_bear	3.728799	1.743764	3.664927	2.207474
	*0.033***		*0.097**	
totflow	1.991964	1.592301	2.024773	1.620761
	0.211		*0.212*	
noFunds	.0078421	.0033148	.008048	.0032949
	*0.018***		*0.015***	
Dbeargeo_swe			-.5522494	1.041824
			0.596	
_cons	-6.870244	2.735603	-6.441309	2.754575
	*0.012***		*0.019***	
based_swe			-.8814759	.3230222
			*0.006****	
DbearSwe			.2482452	.667747
			0.710	
ForFocus	-.2134516	.7045112		
	0.762			
DbearForFo	-.0698317	.9628696		
	0.942			
based_for	.7388891	.523096		
	0.158			
DbearFor	-.03385	.8270526		
	0.967			
type_fix	1.344547	.6173727	1.086655	.7013387
	*0.029***		*0.121*	
type_stock	.7533143	.3046959	.6413126	.2337217
	*0.013***		*0.006****	
normsigma	1.108986	.3877263	1.197652	.4459747
	*0.004****		*0.007****	
Mfee	.335023	.2844216	.3332397	.2805837
	0.239		*0.235*	
Low	-.6044921	.386639	-.6028088	.3844295
	0.118		*0.117*	
Top	.2844145	.6165689	.2788624	.6218286
	0.645		*0.654*	
DbearFix	-.0208696	1.601925	.2602162	1.752647
	0.990		*0.882*	
DbearStock	-2.141386	1.342649	-2.068308	1.356082
	0.111		*0.127*	
Dbearnorms~a	-1.304161	.4233981	-1.391614	.4775163
	*0.002****		*0.004****	
DbearMfeepc	.5083279	.4823254	.5294076	.4750029
	0.292		*0.265*	
DbearLow	.9609988	.7755272	.943721	.7492193
	0.215		*0.208*	
DbearTop	-.5944148	.7759092	-.6083597	.7625541
	0.444		*0.425*	

Table 23 Reports OLS regression coefficients and p-values in italics for 2 regressions. The dependent variable is Capital inflow. The independent variables are Fixed income, Equity, Sigma, Management fee, Based foreign, Based domestic, Foreign focus, Domestic Focus, Low, and Top. These are also interacted with Bear. Control variables are Total Capital inflow and Number of funds. Estimation technique: Robust regression.

Table 24 Wilcoxon rank-sum test

Men		Bull		Bear		Result		
		Mean	Median	Mean	Median	z	Prob > |z|	Bear>Bull
Fixed income	Capital inflow	1.672962	.218723	2.157233	.56185	6.873	0.0000***	0.671
	Change in choice	.4985962	-.013668	1.621503	.3200822	9.883	0.0000***	0.744
Equity	Capital inflow	1.832889	.2049005	.8419361	.236837	-2.641	0.0083***	0.470
	Change in choice	1.096918	-.0277778	.5815146	.0129023	3.949	0.0001***	0.545
Women		**Bull**		**Bear**		**Result**		
		Mean	Median	Mean	Median	z	Prob > |z|	Bear>Bull
Fixed income	Capital inflow	1.28034	.2303295	2.032324	.5809233	7.997	0.0000***	0.700
	Change in choice	.4675278	-.0047409	1.297439	.2878412	9.855	0.0000***	0.743
Equity	Capital inflow	2.321513	.2299145	.8705619	.2524907	-3.566	0.0004***	0.459
	Change in choice	1.174247	-.0222827	.6004466	.0180467	3.092	0.0020***	0.536

Table 24 Comparison of preference of fixed income under bull and bear market regimes, and equity under bull and bear market regimes. The table presents the mean and median of Change in Choice and Capital inflow, the statistica f the test (z), the p-value of the test and the probability of an investor choosing the fund in bear markets for women and men respectively.

Table 25 Wilcoxon rank-sum test

Men	Bull			Bear		
	z	Prob > |z|	Equity>Fixed Income	z	Prob > |z|	Equity>Fixed Income
Capital inflow	-0.012	0.9901	0.500	-11.094	0.0000***	0.272
Change in choice	-0.607	0.5440	0.489	-12.723	0.0000***	0.240
Women	**Bull**			**Bear**		
	z	Prob > |z|	Equity>Fixed Income	z	Prob > |z|	Equity>Fixed Income
Capital inflow	1.267	0.2052	0.523	-11.575	0.0000***	0.262
Change in choice	-0.794	0.4273	0.486	-12.585	0.0000***	0.242

Table 25 The table compares preference of fixed income or equity under bull and bear market regimes. It presents the statistica of the test (z), the p-value of the test and the probability of an investor choosing/investing in an equity fund for both Capital inflow and Change in Choice for men and women respectively

Table 26 Regression analysis

Variable	(1)		(2)		(3)		(4)		(5)		(6)	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
type_fix	.8300771	.3032055	.209598	.3114321					.5459518	.2493817	.5087602	.2555892
	*0.006***		*0.501*						*0.029***		*0.047***	
type_stock	.7254281	.1555885			.2449556	.2159446			.4277234	.1398585	.2750033	.1429428
	*0.000***				*0.257*				*0.002***		*0.054**	
normsigma							.560711	.17108	.5962359	.1898344	.5677205	.1879888
							*0.001***		*0.002***		*0.003***	
Mfee											.199648	.2042325
											0.328	
based_for											.2424495	.1449198
											*0.094**	
ForFocus											.080863	.2047108
											0.693	
Low											.247363	.1808794
											0.172	
Top											.1512958	.1603022
											0.345	
DbearFix	.1388349	.6106174	.8220261	.5169725					.5033008	.7427685	.5233152	.754964
	0.820		*0.112*						*0.498*		*0.488*	
DbearStock	-.8009468	.4063649			-.8005433	.3646508			-.5974446	.5823881	-.8268499	.7046683
	*0.049***				*0.028***				*0.305*		*0.241*	
Dbearnorms~a							-.5151646	.2088546	-.6323534	.2161623	-.6626158	.2223072
							*0.014***		*0.003***		*0.003***	
DbearMfeepc											.3843839	.3696202
											0.298	
DbearFor											.2376109	.2761558
											0.390	
DbearForFo											-.0631342	.3706216
											0.865	
DbearLow											-.5818154	.4099579
											0.156	
DbearTop											2.781025	6.416764
											0.665	
Dummy_bear	.4986428	.3860255	-.1849975	.1759895	.5076261	.3493819	.8226892	.2681435	1.335143	.6749253	1.568554	.7351563
	0.197		*0.293*		*0.146*		*0.002***		*0.048***		*0.033***	
totMENchoi~c	-10.17613	6.723504	-9.613833	6.619929	-10.68686	6.736311	.6301619	6.674476	1.825669	6.875554	1.95384	7.971662
	0.130		*0.146*		*0.113*		*0.925*		*0.791*		*0.806*	
noFunds	.0019665	.0007758	.0019943	.0007803	.0021063	.0008034	.002575	.0009178	.0025453	.0008911	.0033922	.0009483
	*0.011***		*0.011***		*0.009****		*0.005****		*0.004****		*0.000****	
_cons	-.8585833	.5096077	-.2606462	.5365744	-.4624792	.5016882	-1.709246	.6416789	-2.139726	.6731238	-3.064797	.7727799
	*0.092**		*0.627*		*0.357*		*0.008****		*0.001****		*0.000****	

Table 26 Reports OLS regression coefficients and p-values in italics for 6 regressions. The dependent variable is Change in Choice Men. The independent variables are Fixed income, Equity, Sigma, Management fee, Based foreign, Foreign focus, Low, and Top. These are also interacted with Bear. Control variables are Total Change in Choice Men and Number of funds. Estimation technique: Robust regression.

Table 27 Regression analysis

Variable	(1)		(2)		(3)		(4)		(5)		(6)	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
type_fix	2.096345	.6113135	1.148254	.627078					1.388375	.4847653	1.344356	.4928114
	*0.001***		*0.067**						*0.004***		*0.006***	
type_stock	1.10662	.2290249			-.1008971	.4058808			.7203677	.1982469	.4956845	.2245948
	*0.000***				*0.804*				*0.000***		*0.027**	
normsigma							.8807855	.2712552	.987391	.3051642	.9363524	.3150519
							*0.001***		*0.001***		*0.003***	
Mfee											.1899183	.2186797
											0.385	
based_for											.3896868	.2614278
											0.136	
ForFocus											.4548428	.2702155
											*0.092**	
Low											.4122293	.2759346
											0.135	
Top											.6195766	.3231414
											*0.055**	
DbearFix	-.3396414	.7767186	.2465015	.7898037					.5460817	.7443261	.4973854	.7847008
	0.662		*0.755*						*0.463*		*0.526*	
DbearStock	-.6689477	.2653464			-.3287787	.4822349			-.2922332	.2799004	-.479823	.3013658
	*0.012***				*0.495*				*0.297*		*0.111*	
Dbearnorms~a							-.7573149	.2960177	-.9378757	.314021	-.9391476	.3232848
							*0.011***		*0.003***		*0.004***	
DbearMfeepc											.5142821	.3867749
											0.184	
DbearFor											.1990749	.4956377
											0.688	
DbearForFo											-.6877442	.5962133
											0.249	
DbearLow											-.9031079	.5098337
											*0.077**	
DbearTop											-1.033874	.4976712
											*0.038***	
Dummy_bear	.0693947	.6556919	-.5113424	.6562648	-.2808652	.8360026	1.32966	.6664112	1.7503	.7137979	2.533771	.9526181
	0.916		*0.436*		*0.737*		*0.046***		*0.014***		*0.008***	
totMENflowpc	.6413898	1.101156	.6342991	1.102065	.6037176	1.103334	1.169974	.9215207	1.247988	.9191854	1.238256	.9686974
	0.560		*0.565*		*0.584*		*0.204*		*0.175*		*0.201*	
noFunds	.001404	.0022394	.001571	.0022426	.0015582	.0022474	.0043399	.0019316	.0045731	.0019515	.005503	.0021151
	0.531		*0.484*		*0.488*		*0.025***		*0.019***		*0.009***	
_cons	-.4255698	1.7881	.4199328	1.79989	.6989288	1.841244	-2.981986	1.576462	-4.03214	1.651341	-5.447459	1.868394
	0.812		*0.816*		*0.704*		*0.059**		*0.015***		*0.004***	

Table 27 Reports OLS regression coefficients and p-values in italics for 5 regressions. The dependent variable is Capital inflow Men. The independent variables are Fixed income, Equity, Sigma, Management fee, Based foreign, Foreign focus, Low, and Top. These are also interacted with Bear. Control variables are Total Capital inflow Men and Number of funds. Estimation technique: Robust regression.

Table 28 Regression analysis

Variable	(1)		(2)		(3)		(4)		(5)		(6)	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
type_fix	*.2977475*	*.2187129*	-.3404302	.1988399					*.2575865*	*.2417103*	.2128396	.2559556
	0.173		*0.087**						*0.287*		*0.406*	
type_stock	.7469767	.2010043			.5756014	.175474			.3993327	.2016786	.2963678	.2126378
	*0.000****				*0.001****				*0.048***		*0.163*	
normsigma							.4206763	.1567895	.4193737	.1695095	.393867	.1811363
							*0.007****		*0.013***		*0.030***	
Mfee											-.0287515	.1069862
											0.788	
based_for											.3024723	.1840797
											*0.100**	
ForFocus											.3341243	.1355762
											*0.014***	
Low											.2307092	.2074491
											0.266	
Top											.0750679	.1858709
											0.686	
DbearFix	.4862712	.4712474	1.054605	.3338005					.8180366	.2957107	.7001211	.3391058
	0.302		*0.002****						*0.006****		*0.039***	
DbearStock	*-.6625551*	*.4103302*			-.8794904	.2969441			.0416837	.2364052	-.0219882	.2519707
	0.106				*0.003****				*0.860*		*0.930*	
Dbearnorms~a							-.4281858	.1682909	-.4561251	.1783295	-.4498493	.1911348
							*0.011***		*0.011***		*0.019***	
DbearMfeepc											.289503	.2132042
											0.175	
DbearFor											.1664127	.348103
											0.633	
DbearForFo											-.8424864	.3918276
											*0.032***	
DbearLow											-.1792487	.3248953
											0.581	
DbearTop											-.1240835	.2705195
											0.646	
Dummy_bear	.2961248	.3905159	-.2708133	.1815712	.5210544	.2637063	.5435615	.2315418	.4204888	.2480345	.8188008	.3366117
	0.448		*0.136*		*0.048***		*0.019***		*0.090**		*0.015*	
totTC	-11.01346	5.929282	-10.67817	5.820698	-11.48109	5.878497	5.34571	6.159047	6.042049	6.259179	4.746687	5.867619
	*0.063**		*0.067**		*0.051**		*0.385*		*0.334*		*0.419*	
noFunds	.0011169	.0007574	.0012416	.0007634	.0012616	.0007663	.0023481	.0007564	.0022682	.0007615	.0024657	.0007672
	0.123		*0.104*		*0.100**		*0.002****		*0.003****		*0.001****	
_cons	-.3069873	.4973829	.2834135	.5317784	-.1908741	.5034988	-1.392247	.5714347	-1.673142	.5866481	-2.146252	.6601123
	0.537		*0.594*		*0.705*		*0.015***		*0.004****		*0.001****	

Table 28 Reports OLS regression coefficients and p-values in italics for 5 regressions. The dependent variable is Change in Choice Women. The independent variables are Fixed income, Equity, Sigma, Management fee, Based foreign, Foreign focus, Low, and Top. These are also interacted with Bear. Control variables are Total Change in Choice Women and Number of funds. Estimation technique: Robust regression.

Table 29 Regression analysis

Variable	(1)		(2)		(3)		(4)		(5)		(6)	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
type_fix	.7606282	.4464021	-.296675	.4155891					.7315835	.3584068	.659096	.3718055
	*0.088**		*0.475*						*0.041***		*0.076**	
type_stock	1.235536	.342553			.7989509	.3278869			.8514667	.2298301	.6256217	.2323735
	*0.000****				*0.015***				*0.000****		*0.007****	
normsigma							.597932	.2244137	.6136175	.2464361	.5852337	.2654079
							*0.008****		*0.013***		*0.028***	
Mfee											.0233906	.2090061
											0.911	
based_for											.5423019	.2938115
											*0.065**	
ForFocus											.6740852	.2155676
											*0.002****	
Low											.4620736	.3450613
											0.181	
Top											.1338628	.2928725
											0.648	
DbearFix	.9442547	.5862758	1.548349	.5820204					.8950179	.4559305	.7622805	.5473336
	0.107		*0.008****						*0.050***		*0.164*	
DbearStock	-.6875082	.3811405			-1.092132	.4164931			-.3285541	.3103646	-.4071052	.3283776
	*0.071**				*0.009****				*0.290*		*0.215*	
Dbearnorms~a							-.5812268	.2355598	-.6477544	.2483846	-.6737748	.2688305
							*0.014***		*0.009****		*0.012***	
DbearMfeepc											.6724297	.4264275
											0.115	
DbearFor											-1.484806	.7953387
											*0.062**	
DbearForFo											.0299632	.6553002
											0.964	
DbearLow											.0152036	.5892767
											0.979	
DbearTop											-.1647034	.3372776
											0.625	
Dummy_bear	-.7405875	.8039365	-1.339188	.8215792	-.3378838	.8109318	.8498126	.754598	1.077963	.729935	1.780962	.9147939
	0.357		*0.103*		*0.677*		*0.260*		*0.140*		*0.052**	
totWomflow	-.0917902	1.294375	-.100729	1.296177	-.1118426	1.294223	.8953405	1.100151	.9587222	1.100192	1.108183	1.180224
	0.943		*0.938*		*0.931*		*0.416*		*0.384*		*0.348*	
noFunds	-.0011639	.002863	-.0009708	.0028677	-.0010195	.0028665	.0035592	.0022601	.0035937	.0022759	.0044624	.00245
	0.684		*0.735*		*0.722*		*0.115*		*0.114*		*0.069**	
_cons	1.732357	2.307898	2.67234	2.331058	2.085664	2.292785	-1.975579	1.873626	-2.772431	1.920742	-4.157458	2.187457
	0.453		*0.252*		*0.363*		*0.292*		*0.149*		*0.057**	

Table 29 Reports OLS regression coefficients and p-values in italics for 5 regressions. The dependent variable is Capital inflow Women. The independent variables are Fixed income, Equity, Sigma, Management fee, Based foreign, Foreign focus, Low, and Top. These are also interacted with Bear. Control variables are Total Capital inflow Women and Number of funds. Estimation technique: Robust regression.

Table 30 Suest test between women and men

Change in choice Men and Women						
Regression	(1)	(2)	(3)	(4)	(5)	(6)
DbearFix	1.39	1.87			1.89	3.53
	0.2385	*0.1716*			*0.1695*	*0.0604**
DbearStock	0.24		2.12		0.36	0.91
	0.6231		*0.1455*		*0.5502*	*0.3411*
Dbearnormsigma				0.06	0.45	0.21
				0.7996	*0.5014*	*0.6501*

Table 30 Reports suest test for differences in coefficients between two regressions. The regressions tested are 1-6 in Tables 26 and 28. The dependent variables are Change in Choice Women and Men. The independent variables tested are Fixed income, Equity, and Sigma interacted with Bear. Table 30 presents the test statistica of the test and the p-value in italics.

Table 31 Suest test between women and men

Capital inflow Men and Women						
Regression	(1)	(2)	(3)	(4)	(5)	(6)
DbearFix	1.48	0.46			0.51	0.72
	0.2245	*0.4984*			*0.4769*	*0.3968*
DbearStock	0.85		0.16		0.34	0.93
	0.3554		*0.6873*		*0.5613*	*0.3354*
Dbearnormsigma				0.59	0.56	0.59
				0.4417	*0.4526*	*0.4434*

Table 31 Reports suest test for differences in coefficients between two regressions. The regressions tested are 1-6 in Tables 27 and 29. The dependent variables are Capital inflow Women and Men. The independent variables tested are Fixed income, Equity, and Sigma interacted with Bear. Table 31 presents the test statistica of the test and the p-value in italics.