The Most Important Behavioral Biases in Investing

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Abstract

This paper focuses on the risks connected with the decision-making of investors and explains their most important biases – loss aversion, mental accounting, herding and anchoring. The aim of this paper is to describe these psychological biases connected with money and investing and to explain the main risks investors face in relation to these issues. These biases are often connected with emotions, representing a significant risk. Loss aversion and herding, in particular, are the most common biases for many investors, posing an important threat not only for individual investors but for whole financial markets.

Key words

Risks, investors, biases, behavioral finance, financial markets.

1. Introduction

It is now assumed that many of the mistakes investors make in financial markets are not caused by their ignorance of financial instruments but by their behavior. These mistakes are influenced by emotions and are often involuntary and unintentional (Montier, 2010). This connection between financial markets and psychology is very important and there is a specific field of study devoted to it: behavioral finance. Behavioral finance has increasingly become part of mainstream finance, providing explanations for people's economic decisions by combining behavioral psychological theory and conventional finance (Baker and Nofsinger, 2010).

Traditionally, economists concluded that people behave in order to maximize the expected value of their utility. Behavioral finance has challenged these utility maximization assumptions as inconsistent with ordinary human behavior (Burton and Shah, 2013). Behavioral finance studies the effects of emotional factors on the economic decisions of individuals and the consequences they have for financial markets. Behavioral finance is a field of study that offers explanations for these irrational individuals' investment decisions as well as financial market outcomes.

The aim of this paper is to describe the main psychological biases connected with money and investing and to explain the main risks investors face in relation to these issues.

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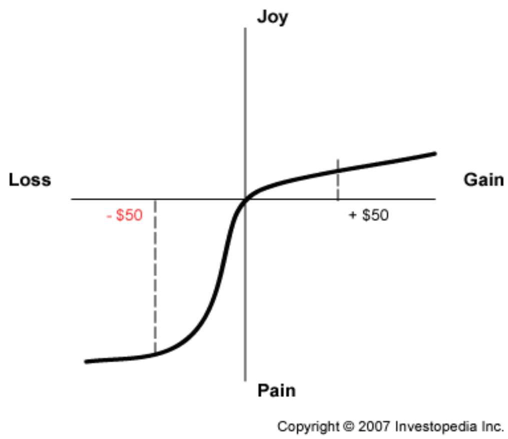
2. Loss Aversion

Loss aversion bias marked the very beginning of behavioral finance, as first described in 1979 in the paper "Prospect Theory: An Analysis of Decision under Risk" by Daniel Kahneman and Amos Tversky.

Kahneman and Tversky researched human risk-aversion and found that people's attitudes associated with gains are different from those concerning losses. This means that homo economicus and the idea of the rationally acting human are challenged by risk aversion. The authors proved that the same amount of loss brings more pain in comparison with gain and joy. Prospect theory formalizes the decision process in a way that corresponds more closely to how people behave than the utility approach of traditional economics (Burton and Shah, 2013).

Graph 1: Prospect Theory



Source: Investopedia.com

Let us consider a typical example of this type of bias. In the final round of a competition, contestants are asked a question but face the prospect of losing all their money if they answer incorrectly. However, the majority of the contestants will choose not to answer even though they stand to double their money if they answer correctly. The example shows that generally people do not like risk because they are afraid of making too big a loss. Most people think receiving less or nothing is a more acceptable result.

In the investment process this bias represents a situation in which investors resist investing in riskier instruments, e.g. stocks, because of their likelihood to be risky. This bias is especially typical for conservative investors and can result in a disproportionate portfolio created by overly conservative financial instruments. A portfolio created in such a way is ultimately susceptible to inflation. Table 1 represents the structure of savings among Czech households in 2016.

Table 1: Structure of Savings among Czech Households (in %, 2016)

Current Accounts	47,4%
Term Accounts	6,8%
Foreign Currency Accounts	2.7%
Building Savings	11,2%
Pension Funds	11,8%
Insurance Funds	8.6%
Investment Funds	11.6%

Source: Czech National Bank, Ministry of Finance, AKAT

Czech investors are prime examples of conservative investors for a very long period. In 2004 they held 69% of their savings in bank accounts and they invested only 7% in funds. And this situation has changed very little from that time – nowadays Czech households hold more than 50% of their savings in different types of bank accounts, with the largest share deposited in current accounts. And since they eschew riskier financial instruments their investments fail to bring higher yields. This situation is partly explained by the low financial literacy of investors and partly by the bad experience of investing in privatization funds, as evidenced during voucher privatization in the Czech Republic. However, the result is the same in both cases - the investor is not emotionally prepared for more volatile/riskier investing.

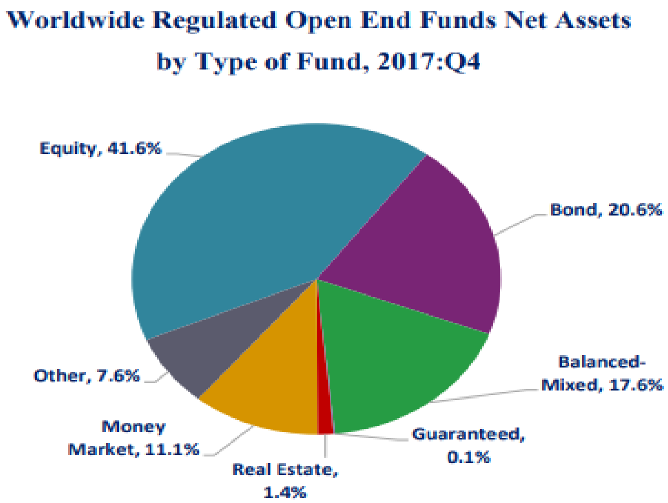
2.1 Disposition Effect and Regret Theory

These biases are closely connected with loss aversion. The disposition effect relates to the tendency of investors to sell assets which price has increased but retain assets that have decreased in value. This allows investors to enjoy the feeling of winning faster and delaying the pain of loss. It is also known as the "too proud to sell" phenomenon.

Regret theory is the theory that fear of regret can motivate decision-making (Havlíček and Stupavský, 2013). According to this theory, investors may avoid investment decisions because they are afraid of a scenario in which their investments will decrease. The opposite situation is where investors feel the need to invest because of the fear of missing out on an opportunity. In the first example the fear lies in regretting the decline in value of their investments, while in the second example the fear lies in regretting an increase in value as a result of a missed opportunity. Consequently, people anticipate regret if they make a wrong choice, and take this anticipation into consideration when making decisions. Major financial decisions appear to be potentially affected by this feeling of regret.

E.g. at the end of 2017, 42% of worldwide regulated open-ended fund net assets were holding in equity funds. The net asset share of bond funds was 21% and the net asset share of balanced/mixed funds was 18%. Money market fund net assets represented 11% of the worldwide total – see Graph 2.

Graph 2: Structure of Funds by Type of Fund



Source: ICI – Investment Company Institut

The situation in the Czech Republic is different (Tables 2 and 3). Czech investors do not invest in equity funds. In 2004 they had in these funds less than 10% of their investments in collective investment instruments. On the other way they held 50% in money market funds – they were extremely cautious after bad experience with voucher privatization and "dot-com bubble" crisis.

Table 2: Net Assets by Type of Fund in the Czech Republic (in %, 2004)

Equity Funds	8,6%
Bond Funds	20,2%
Balanced - Mixed Funds	13,4%
Money Market Funds	50,7%
Real Estate Funds	x
Fonds of Funds	0,6%
Guaranteed Funds	6,5%

Source: AKAT

In 2017 the structure of funds is following: the largest increase was in mixed funds (to 20%) and bond funds (to almost 25%)[2]. Although the third highest increase was in equity funds, still

[2] The decrease in the volume of funds in money market funds is logical in the context of low interest rates and change of classification of funds by EFAMA and AKAT.

in comparison to the worldwide portfolio it is only a half. This means that they are afraid of a situation in financial markets in which their investments can decrease – and this is typical scenario for stocks with their generally higher volatility.

Table 3: Net Assets by Type of Fund in the Czech Republic (in %, 2017)

Equity Funds	20,5%
Bond Funds	24,6%
Balanced- Mixed Funds	39,0%
Money Market Funds	0,5%
Real Estate Funds	4,7%
Fonds of Funds	5,0%
Guaranteed Funds	5,6%

Source: AKAT

3. Mental Accounting

This bias pertains to the direct relationship we have with money based on emotions. It is based on the concept that we form behavioral attachments to money according to our feelings (Belsky and Gilovich, 2003). People have different mental accounts for the same kind of resource. For example, people distinguish the way in which income is received. The less probable your source of income the faster you will spend it. When money is won in a lottery or an unexpected bonus is received, in such cases people will spend faster than if they were to receive their regular salary. Another example of mental accounting concerns payment. When people use payment cards they are likely to buy more goods than if they were to pay in cash. In simple terms, when you pay with a card it hurts you less because you don't see the money vanishing before your eyes.

Mental accounting also affects investors, who are often prepared to lose money on the financial markets. In other words, investors apportion money they can afford to lose as "play money", which they are ready to spend even through speculation. This behavior is of course irrational, since investing money in financial instruments that are likely to be lost is an evident example of emotional decision-making.

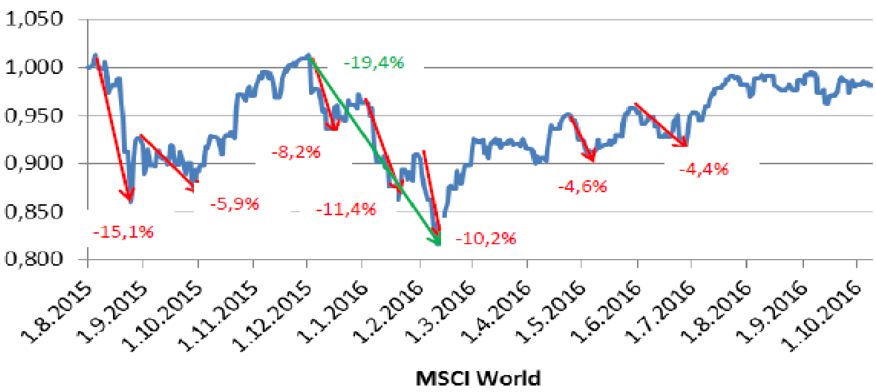
3.1 Ignoring the Importance of Small Amounts

This bias is demonstrated in situations where relatively small amounts of money are ignored because the importance of such small amounts cannot be appreciated as having an impact over the long term (Belsky and Gilovich, 2003). Investors are often persuaded that such investing is futile and unimportant. But if a person were to invest in an equity fund from the age of 25 to the age of 65 monthly 160 CZK, that person would pocket more than 1 million CZK after 40 years (1,011,853 CZK, a historical average yield of 10% in equity funds). Take the person who spends 50 CZK every day on buying a cup of coffee. That works out at approximately 1,000 CZK that could be invested every month. Over the course of a 40-year working life that person would lose more than 6 million CZK (6,324,080 CZK, a historical average yield of 10% in equity funds). Similarly, those who invest in financial instruments take little stock of the fees charged for these financial instruments because the fees are seen as negligible at the time.

4. Herding

The herd effect is the tendency for individuals to mimic the actions of a larger group. Herding often involves a strong herd mentality, which can affect the ways in which investments are made in financial markets. This bias is also connected with loss aversion bias. An example of this bias was seen in global financial markets in 2015/2016 where higher volatility was observed in the stock market, which in turn affected the types of investments being placed in investment funds.

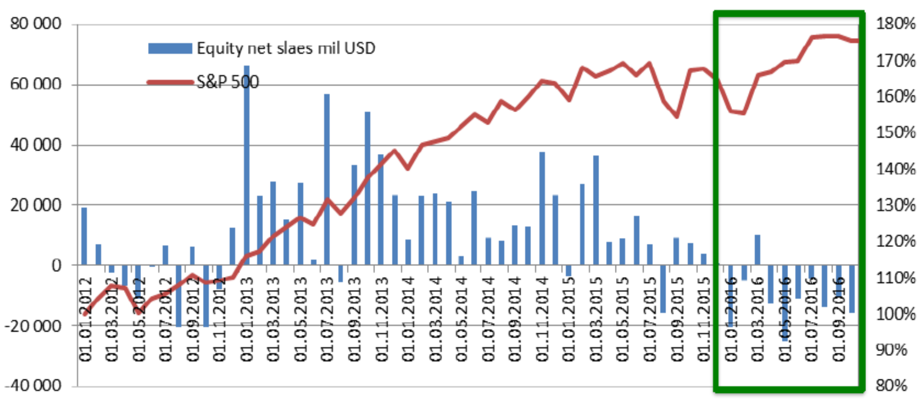
Graph 3: Stock Market Development



Source: Fichtner Investment Advisors

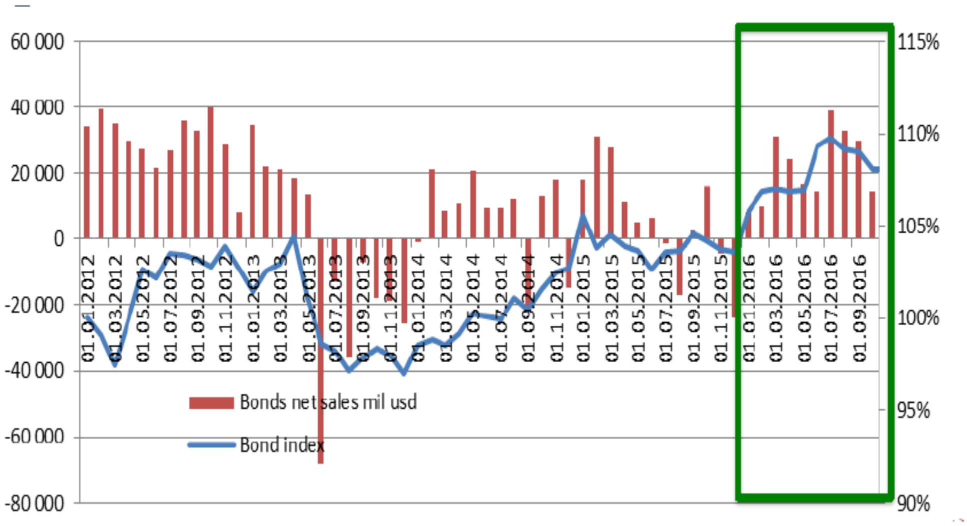
During this investment period, investors became wary of investing in equity funds due to this increased volatility and began to withdraw their money from these funds. This decision-making was influenced by fear and the behavior of other investors.

Graph 4: Equity Funds Net Sales (in millions of USD to 12/10/2016)



Source: Fichtner Investment Advisors

Graph 5: Bond Funds Net Sales (in millions of USD to 12/10/2016)



Source: Fichtner Investment Advisors

In contrast, net sales in bond funds increased due to lower volatility and high profits. However it must be noted that due to long-term low interest rates, larger investments in these funds are currently not recommended. This decision-making on the part of investors was influenced by greed and the behavior of other investors.

In general terms, this type of bias is one of the most dangerous for investors. Indeed, a strong herd mentality can even affect financial professionals, as was the case in the "dot-com bubble" of 2000 when herd investors were persuaded that internet stocks were the best investments. And more recently in 2016 there was panic in the financial markets as a result of the Brexit decision and the Trump victory in presidential elections in the USA.

Graph 6: S&P 500 index

Source: Yahoo Finance

5. Anchoring

Anchoring is a perception bias. Everybody has their own anchor, or conviction, as to what the right number or situation is any given context. Such anchors can affect investors' frames of reference. The most typical situation involves attempting to guess something about which you have limited information (Burton and Shah, 2013). Anchoring also refers to situations where investors are persuaded from previous experience that, for example, interest rates are, as a rule, high which means the relevant contemporary information is not sought. They have their own strong anchoring belief in the interest rate level, which can affect their decision-making when it comes to investing. Such investors tend to invest very conservatively because they feel there is no need to run a risk. For example, if your belief is that interest rates are prohibitively high, your money will remain in your current account.

This anchor is very common among Czech investors, whose perceptions of interest rates are connected with a situation that occurred between the years 1990 and 1998 when current account interest rates soared to just above 8%.[3] The result of such thinking prompted Czech investors to pump more than 50% of their savings into bank accounts (see *Table 1*). Unfortunately, the contemporary situation is completely different in that current account interest rates are now very low, often even lower than 0.01%. And although inflation during last years was relatively very low, still was higher in comparison to these low interest rates. Furthermore nowadays situation has changed and inflation is increasing.

Table 4: Inflation in the Czech Republic (in %, 2004-2017)

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
2,8%	1.9%	2,5%	2,8%	6,3%	1,0%	1,5%	1,9%	3,3%	1,4%	0,4%	0,3%	0,7%	2,5%

Source: Czech National Bank

Also common investment anchors can take the form of investment indices (DJIA, S&P 500) such as TV, Internet, other financial advisors, neighbours, relatives and co-workers. For the vast majority of investors they are very difficult to avoid.

6. Conclusion

This paper introduces the most typical investment biases of investors. These biases are often connected with emotions, representing a significant risk. Crucially, these psychological risks can influence the whole investment and decision-making process. Loss aversion and herding, in particular, are the most common biases for many investors, posing an important threat not only for individual investors but for whole financial markets.

[3] In the Czech Republic the highest discount rate was 13%. In 1997, the highest two-week repo rate was 39%.

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