

INVESTOR RISK PERCEPTION IN THE NETHERLANDS



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Summary



About this survey

In October 2017, we conducted in collaboration with the AFM (Autoriteit Financiële Markten) an online survey among 757 participants in the Netherlands, asking them to indicate their perceived risk and investment propensity for different investments which were presented via return distributions.

Risk perception plays a central role in investors' decisions. It is vital to determine and understand which factors influence investor risk perception. We find that loss probability has the largest influence on risk perception both for investors and non-investors. Importantly, loss probabilities are overestimated especially by non-investors. Our results hence explain investment decisions.

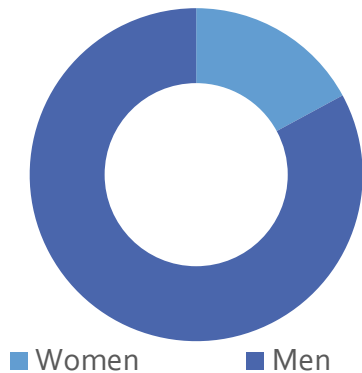
Our findings in a nutshell:

- **Risk perception drives investment decisions.** Higher *perceived* risk (not objective risk) leads to lower investment propensity.
- **Loss probabilities have the largest influence on risk perception.** People perceive distributions as more risky when distribution of returns contain more scenario's that show a negative return.
- **Loss probability is overstated especially by non-investors.** Both investors and non-investors overestimate loss probabilities. For non-investors this is stronger. The effect is particularly strong for longer investment periods.

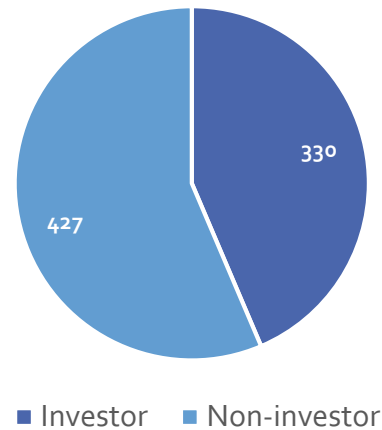
Demographics of Participants

757 Dutch individuals participated in our study conducted in October 2017 via www.AFMConsumentenpanel.nl.

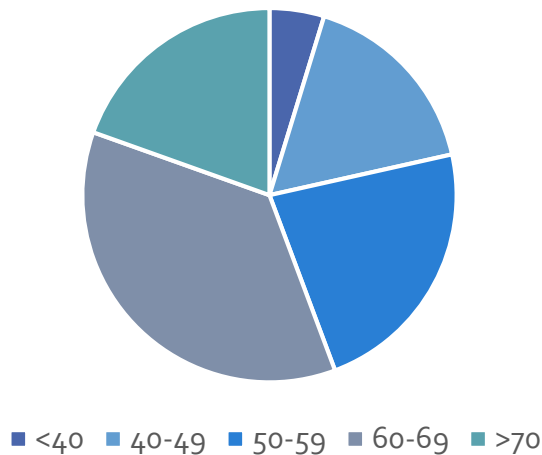
83% of all participants are male.



Almost half of all participants in our study are investors.



The median age is 60 years.



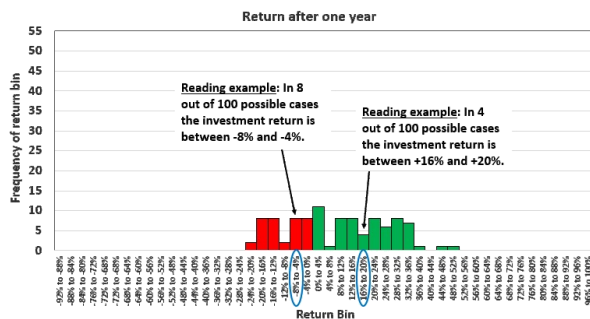
Overall, about 1 in 5 in the Netherlands is an investor.

Perceived Risk and Investment Propensity

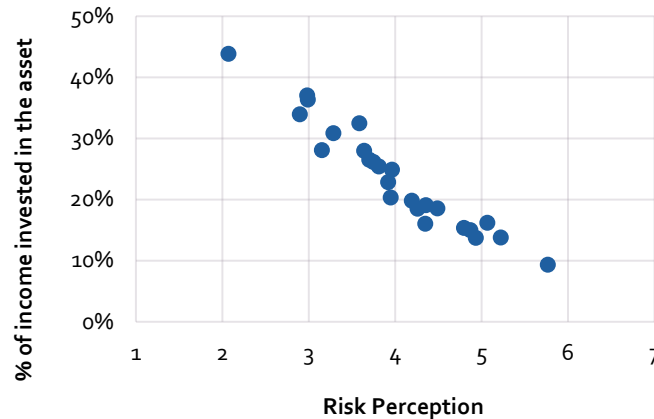
In the first part of this study we investigated the risk perception of the Dutch. In particular, survey participants were confronted with 10 out of 25 different distributions of risky investments in the form of colored histograms that illustrate possible returns of the investment and how likely these returns would occur. To not to compare apples with oranges, all 25 investment opportunities had the same

expected return, so that they only differ in risk measures. Participants were asked to rate the perceived riskiness a particular asset on a scale from 1 to 7. Additionally, we asked them about their likelihood to invest in these assets (1 to 7 scale).

As a first result, the perceived risk of investors plays an essential role for their willingness to invest (percentage of income to be invested in a risky asset). The figure below shows a strong relationship between these two factors. We observe that the lower the degree of perceived risk, the higher the propensity to invest in a risky investment opportunity.



“The higher the perceived risk of an investment, the lower the propensity to invest.”



This graph shows average risk perception plotted against average investment amount as stated by the respondents for the 25 risky assets used in the study. There is a clear negative relation to be observed, stating that higher risk perception (on average over all respondents) leads to lower willingness to invest. All investments in the study had the same expected return.

“Loss probability has the strongest impact on perceived risk of Dutch individuals.”

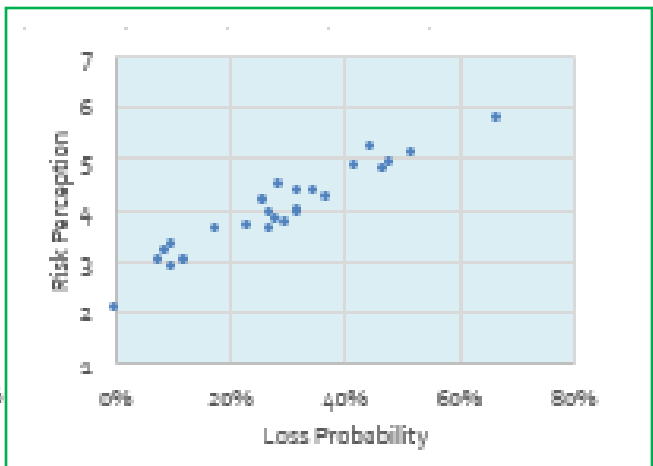
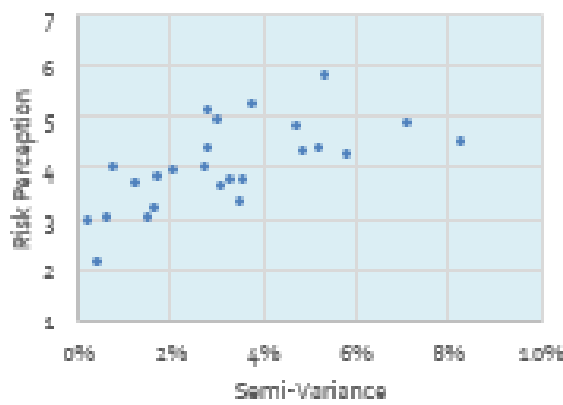
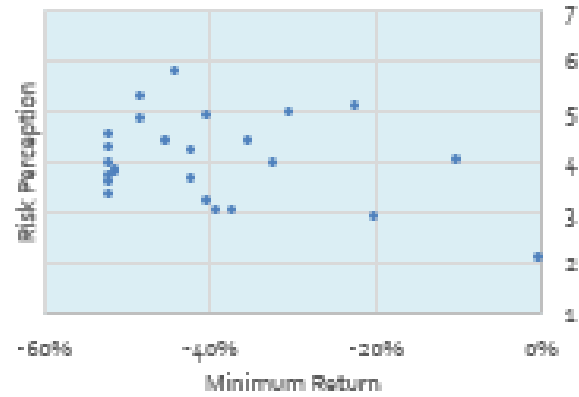
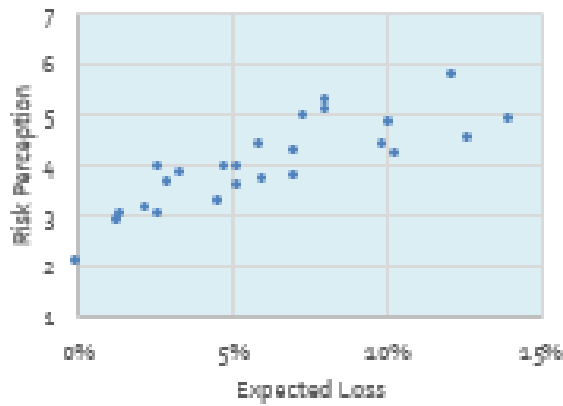
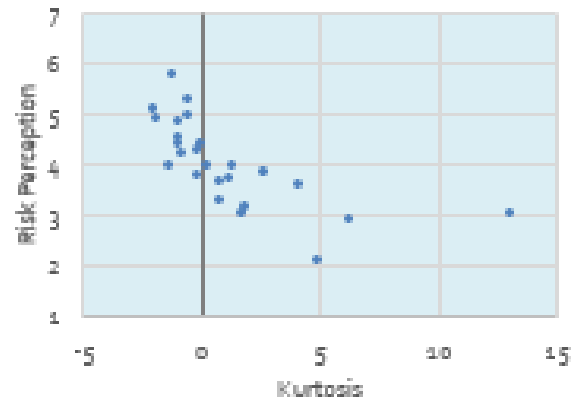
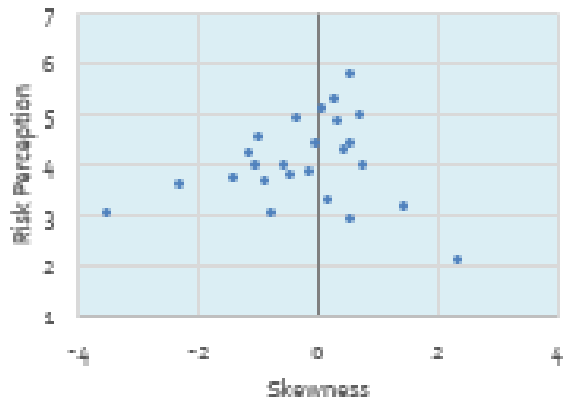
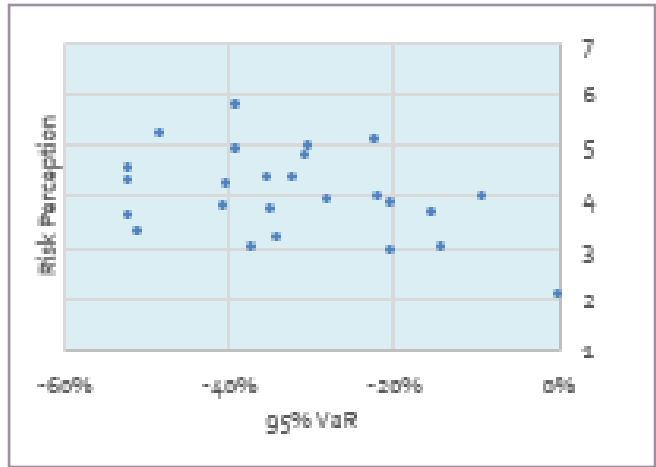
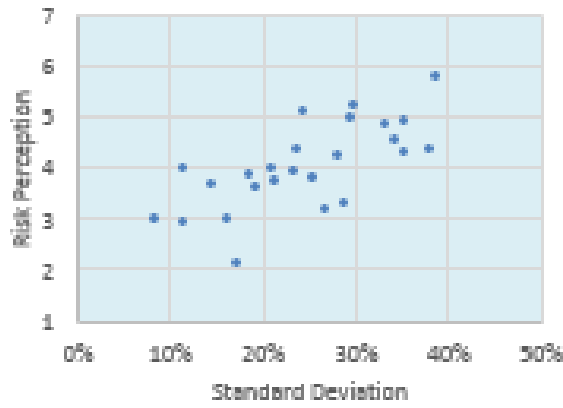
After having established a relationship between perceived risk and investment propensity, we now want to explore what measure exactly drives risk perception for investments. These risk measures can be volatility of returns (how much they fluctuate around the average), the lowest possible return, other mathematical measures, or the probability of losing (“In how many cases will I lose any money with my investment”).

Plotting different risk measures against average scores of respondents’ risk perception (1 to 7) confirms the idea that **the probability of incurring a loss has**

the strongest impact on the risk of an investment as it is perceived.

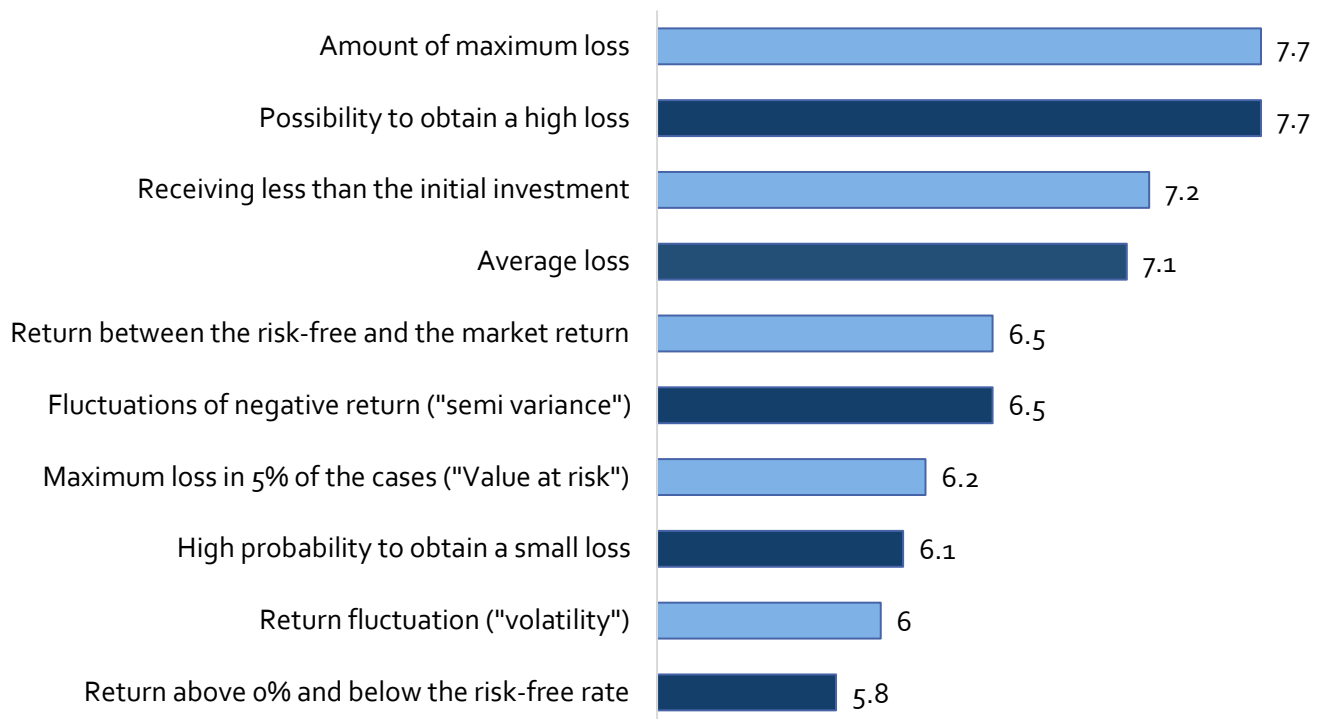
Traditional risk measures such as the volatility of returns on the other hand seem to exhibit lower explanatory power with regard to perceived risk. One risk measure that comes close to loss probability is the expected loss size of an investment, a measure that is also stated by participants to influence their perception of investment risk. **Hence, what Dutch perceive as risk is mostly the probability that they lose any money.** How much they lose with a potential investment (let’s say whether it is 5% or 10%) is only of secondary importance.

Perceived risk versus various risk measurements



In addition, we asked participants directly which factors play an important role in the risk perception of investment opportunities *in a verbal manner*. Confronted with 10 different risk measures, including standard deviation, loss probabilities and most extreme

negative returns, we asked participants to rate these risk measures on a scale from 1 (low impact on risk perception) to 10 (high impact on risk perception). **The most important ones are the “possibility to obtain a high loss” and the “amount of maximum loss”.**



Furthermore, we asked participants to *write down in words themselves* which factors are important when judging the risk of an investment opportunity. Above presented result can be confirmed;

investors, also in their own words, focus on the probability of incurring a loss. They additionally look at the firms' sector, the economy as a whole and the costs, interestingly (see word cloud).

Politieke invloeden
Historische Rendement
Betrouwbaarheid
Kans op verlies Kosten
Branche Economie
Volatiliteit Beleggingshorizon
Toekomstverwachtingen
Rendementsverwachtingen
Kans op een negatief rendement

Investor Beliefs

We have shown that loss probabilities have a high impact on risk perception and investment propensity.

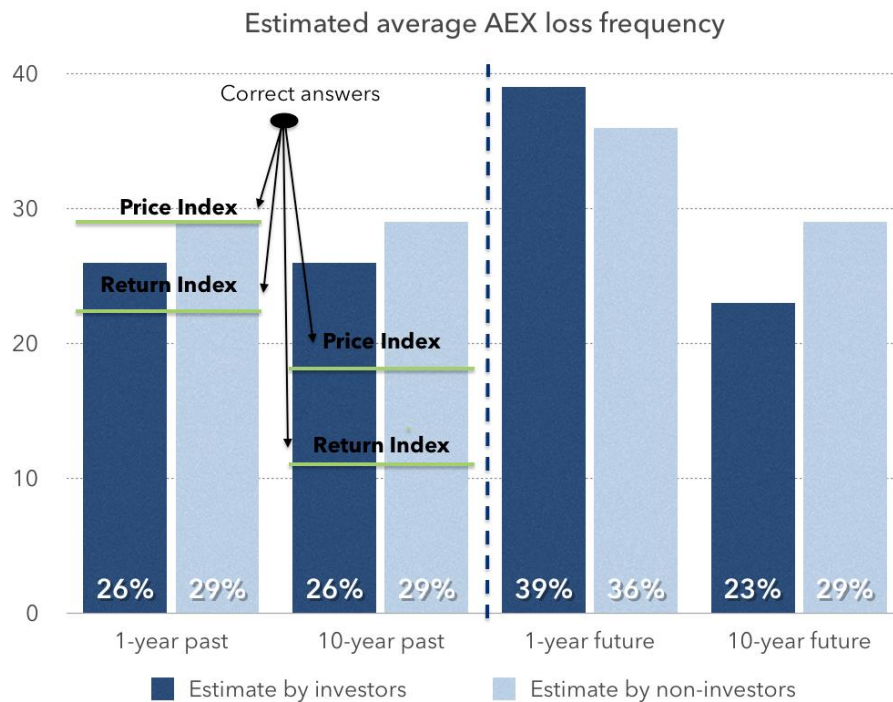
A very important follow-up question is whether individuals are able to accurately estimate loss probabilities in the stock market. If not, this can explain why many people do not invest in stocks. We asked respondents to estimate the probability of incurring a loss (if investing at a random time in the last 50 years) in the AEX for an investment horizon of *1 year* or *10 years*. Let us first see what the correct answers would have been before turning to the answers of the respondents in the survey study.

Taken data over the last several decades, the actual loss frequency for an investment in the AEX for a 1 year investment was 22.6% and for the 10-year horizon only 10.8%. This is calculated including not only the absolute price appreciation, but also dividend payments (so-called return index). If we ignore dividends (so-called price index) the numbers are 29.0% (1 year) and 19.0% (10 years).¹ If we look abroad, the numbers are similar for foreign stock market indices: The S&P 500 in the United States, for example, had a 1-year loss probability of 27.0% and a 10-year loss frequency of only 9.0% (based on return index).

¹ We calculated the AEX back longer than it actually exists to have a longer and more representative data history.

“The probability of incurring a loss is especially overestimated by non-investors.”

Now, what did the respondents think?



Past returns

We see that on average (left part of diagram) that **Dutch individuals overestimate the probability of incurring a loss** for the 10-year period quite extremely (by 6 to 19%), and they also overestimate it to some extent for the 1-year period, if dividends are taken into account. Also, we find that investors have on average lower probability estimates than non-investors. Hence, non-investors overestimate loss probabilities even more.

Future returns

We also asked a different group of survey participants to estimate the loss probabilities for a one-year and a ten-year investment *starting today in the AEX*, so for the *future*. Of course, we do not know what the future brings, so there is no correct answer to these questions. Our results show that Dutch individuals expect losses to be more likely in the near future (1 year) for an investment in the AEX, so they are rather pessimistic (see right part of diagram above).

Conclusion

The main findings of this study are:

- Investors and potential investors distinguish between gains and losses quite strongly, the volatility and size of returns is of second order importance.
- As a result, the likelihood of losing money is an important driver for how Dutch perceive risk.
- Loss probability directly affects the investment propensity of investors.
- Our results are in contrast to classical finance theory and current information disclosure rules, which assumes investors to care primarily about volatility of returns.
- Dutch overestimate loss likelihoods for stock investments, particularly for longer investment horizons.
- Because loss probability, as we have shown, can drive propensity to invest, overestimating investment losses could explain why many Dutch individuals do not invest in the stock market or invest only small amounts.

This research was conducted in collaboration with the Dutch Authority for Financial Markets (AFM). Involved researchers:



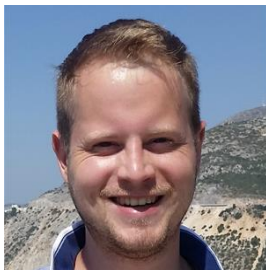
STEFAN ZEISBERGER

Stefan Zeisberger is responsible researcher for this study. He is Professor of Finance at Radboud University and at the University of Zurich (Switzerland). His research focuses on investor psychology and how to improve decision making of investors.



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