

Many underestimate financial loss due to poor arithmetic

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FINANCIAL LOSS: Can you do the maths?

UNIVERSITY of STIRLING 



NEEDS

50%
LOSS



TO BREAK-EVEN

100%
GAIN

✓



Pension



Stocks

In different tests, Stirling research found...



Only 1/3
could get the
maths right



the more volatile the
markets, the more people
overestimated the value



size of loss didn't
change people's
understanding

But...



INSTRUCTIONS



MORE TIME



NUMERACY +
FINANCIAL LITERACY

Helped get it right ✓

Can you do the maths? Credit: University of Stirling

Anyone who has lost out on an investment in recent weeks - from pension funds and stocks to the housing rental market and currency exchange - may have lost more than they realise, according to new research from the University of Stirling.

In a study involving five tests on almost 3,500 people, experts found that the vast majority of individuals underestimated the difficulty of breaking-even after a financial loss.

Philip Newall, a Behavioural Science PhD student in the Stirling Management School said: "We have found many people are let down by their arithmetic when it comes to coming back from a financial loss. Individuals who may regularly come into contact with different financial systems, such as investing in pensions or exchanging currency, struggle to fully understand how much of a return they need to return from a loss.

"Those who are not expert investors assumed that after, for example, a 50 per cent loss, they only needed a 50 per cent gain to balance things out. However, when you lose a certain percentage of an investment, you actually need a bigger percentage gain to get back to where you started. So, if you have £100 and take a 50 per cent hit, you have just £50 left. To get back to £100, you now need to achieve a gain of 100 per cent so you don't lose out.

"Without an understanding of this concept, people frequently overestimate the final value of their investment, even when the percentage changes are dramatic. For example, many people thought that an asset with returns of 100 per cent followed by a 100 per cent fall had

retained its original value when in fact it was worthless."

In one experiment, only a third of participants were able to correctly answer two questions that involved the same mathematics.

No matter what percentage loss participants were questioned on, how frequently they were posed with the calculation, or whether they were offered a bonus for getting it right, a worrying number of participants continued to get the sums wrong.

People with higher levels of financial literacy and numeracy were slightly more successful at working out the right answers. While those who deliberated for longer and thought about the problem in more detail were also more likely to get the right answer.

He added: "With financial markets continuing to fluctuate, more of us are faced with financial decisions that pose some risk of loss. It's important that we can correctly assess the risks tied to different investments before disaster strikes, and understand what we need to do to ensure our assets are worth as much as we think."

Liam Delaney, Professor of Economics at the University added: "We are increasingly understanding the need for financial regulation to be informed by rigorous research from psychology and behavioural economics. This research demonstrates how difficult people find it to understand complex financial products. We need greater emphasis on finding ways to make information about the price and returns of investment products understandable to non-expert investors."

More information: *Judgment and Decision Making*, Vol. 11, No. 5, September 2016 journal.sjdm.org/16/16222/jdm16222.pdf

Provided by University of Stirling

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