

# PERSPECTIVES

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## Behavioral finance

### How rational are you?

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**One of the best books on how our minds work is *Thinking, Fast and Slow* by Nobel Prize winner Daniel Kahneman. In this seminal book, Kahneman explores the workings of our minds – and how the mind can really be thought of as two separate systems.**

System 1 is fast, intuitive and emotional, according to Kahneman. This is our "emotional mind," or our intuition. System 2, by contrast, is slower, more deliberate and more logical. System 2 is our "rational mind."

System 1 is extremely powerful, able to make amazing decisions in the blink of an eye. In chapters three and five of his book, Kahneman introduces a series of questions to illustrate System 1's speed in coming up with answers.

I encourage you to get a pen and answer the following three questions. Just for fun, time yourself to see how long it takes you to answer them all.

Question 1: A bat and a ball cost \$1.10 in total. The bat costs a dollar more than the ball. How much does the ball cost?

Question 2: If it takes five machines five minutes to make five widgets, how long would it take 100 machines to make 100 widgets?

Question 3: In a lake, there is a patch of lily pads. Every day, the patch doubles in size. If it takes 48 days for the patch to cover the entire lake, how long would it take for the patch to cover half of the lake?

Before we go on, what was the total time you took to answer these questions?

Now we'll proceed to the answers. The answer to Question 1 is five cents; to Question 2, five minutes; and to Question 3, 47 days. How did you do?

When these questions were given to university students, the best results came from the Massachusetts Institution of Technology. Still, only 48% of MIT students got all three answers right. At Harvard, only 20% answered all three right, with 20% getting none right. Several other universities did much worse. At Michigan State, for example, only 6% got all three right, and 49% got none of them right!

These are not particularly difficult questions. So why did such a large percentage of bright students in very selective universities get them wrong?

The reason comes back to System 1, and the fact that although System 1 is extremely fast, it is sometimes too fast and wrong. But when System 1 comes up with an answer of some sort, too often our rational, logical System 2 accepts it without further thought.

These three questions are called the *Cognitive Reflection Test*. They were specifically chosen because they are not really that difficult, but each presents an "obvious" (though incorrect) answer via System 1. What the test measures is how readily different people accept these intuitive answers, rather than reflecting on them and questioning their intuition.

Note: When given to students, these three questions were part of a much longer set of questions. The students were not alerted to the fact that these particular ones might be somewhat tricky. For that reason, I asked you to time yourself in answering them.

A researcher who developed these questions, Shane Frederick, has examined how people who do well on this test compare to those who don't. Frederick found that people who score low on the test tend to be more impatient, impulsive and keen to receive immediate gratification.

Frederick's findings also make it clear that while our System 1 is extremely fast and powerful – and we couldn't survive without it – it sometimes leads us astray. Our conscious, rational mind needs to know when to intercede, when to trust our intuition and when not to. That balance, that wisdom, is all-important in many areas of life, especially in investing and our other financial decisions. ■



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