

## **Preregistration: Mental Models of the Stock Market**

# **Real News Study**

**Peter Andre, Philipp Schirmer, Johannes Wohlfart**

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We preregister the Real News Study.

### **Study parameters**

- Sample size: 500 (about 250 per treatment)
- Sample type: Prolific sample (no quotas)
- Start of data collection: September 12, 2023 (after preregistration)
- Number of treatments: 2
- Randomization method: Computerized via Qualtrics
- We plan to work with all complete responses. In the (typically very rare) case that a respondent submits multiple responses, we only count the first response.
- Respondents can only start with the survey if they pass an attention screener. Moreover, they can only proceed with the survey if they pass a comprehension quiz that tests their understanding of the scenarios (multiple attempts are allowed).

**Study design** The study is based on the main descriptive study but adopts a between-subject design and relies on real news. Specifically, it deviates from the main study as follows:

- between-subject design: respondents see either good or bad news about the stock of the company Siemens Energy (treatment variation)
- real news: the news is real old news
- quantitative return forecast: respondents make a quantitative return forecast
- incentivized return forecast: the return forecast is incentivized

- incentivized investment decision: after respondents explain their return forecast, they make an incentivized investment decision where they can invest £100 pounds in either a safe savings bond or the Siemens Energy stock

See instructions for all details.

We plan to winsorize the quantitative return forecasts at +30% and −30%.

**Research question** As in the main study, we ask whether old stale news affects respondents' future return forecasts and how respondents explain their forecasts. In addition, we study whether old stale news also affects incentivized investment decisions.

# Instructions (good news condition)

[Introduction as in other studies]

## About this survey

This survey is about an investment in the stock market. Depending on your decisions, you can earn additional money in this survey. Therefore, please read the instructions carefully.

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## Siemens Energy

On the next page, you will receive information about the exchange-traded company ***Siemens Energy***.

Siemens Energy is a German-based global company focused on energy technologies, including the generation and distribution of electricity. The company plays a crucial role in the international energy sector. It offers a diverse range of products and solutions for generating power from both renewable sources like wind and solar, as well as conventional sources like natural gas and coal. Siemens Energy aims to lead the transition towards more sustainable, reliable, and cost-effective energy systems worldwide.

## Four Months Ago: Siemens Energy Announces 7 Billion Euro Wind Power Deal

About four months ago, Siemens Energy made an announcement that received a lot of attention among stock market traders. Here is a summary of the news story.

Siemens Energy, in partnership with Spain's Dragados Offshore, secured a multi-billion euro contract with TenneT, a prominent German-Dutch grid operator. The deal, worth nearly 7 billion euros, is aimed at enhancing the connectivity of wind farms in the North Sea to mainland Germany. This significant contract promises to increase the availability of renewable energy, as it allows for the transfer of up to 6 gigawatts of offshore wind power to the German electrical grid.

The contract involves three key connectivity projects that will link wind-generated electricity from the North Sea to German cities. Siemens Energy will manufacture the main electrical components, such as switchgear, transformers, and converter technology. The projects are an extension of Siemens Energy's ongoing commitment to renewable energy, as the company recently secured similar large-scale contracts at the end of last year.

Recall: This news story broke around four months ago and received a lot of attention among stock market traders invested in or observing Siemens Energy's stock.

### Quiz

**Please select all correct statements in the following list. Do not select any incorrect statements.**

Siemens Energy announced that they plan to take legal action against a former investment partner.

Siemens Energy announced a big deal worth nearly 7 billion euros.

The announcement was made about four months ago.

The announcement was made earlier today.

The announcement did not receive attention among stock market traders.

The announcement received a lot of attention among stock market traders.

The deal focuses on enhancing the connectivity of wind farms in the North Sea to the mainland.

The deal focuses on building new coal-fired power stations.

**Well done!** All responses were correct.

**Now, you can earn additional money.** On the following two pages, you have the opportunity to earn extra money based on your answers. Please respond carefully.

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## Your prediction

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**Review the news story** (*click to open detailed description*)

► **Four Months Ago: Siemens Energy Announces 7 Billion Euro Wind Power Deal**

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Consider the following investment.

Invest \$1,000 in Siemens Energy stock today, **several weeks after the announcement was made.**

Sell these stocks in twelve months from now.

**Your task is to indicate which return you would expect for this investment.**

Recall that the return of an investment in a stock is the percent change in value that you receive from investing in that stock. It includes both dividend payments and the change in the stock price. For comparison, the DAX—which is the German stock market index that represents the 30 largest companies—had an average annual return of 6% over the last ten years.

**You can earn additional money based on your prediction.** We will calculate the actual return of the investment in a year from now. If your prediction is at most 0.5 percentage points away from the actual return, we will transfer £2 to your Prolific account in a year from now.

**Please predict which return you would expect for the above investment.**

I predict a return of ...

%

## Important

On the next page, you will encounter an open question in which we will ask you to explain the prediction that you made on the previous page.

From our experience, it can take about **2 minutes** to complete this question.

Your responses are very valuable for this research project. Therefore, **please take your time to respond carefully.**

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## Your explanation

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**Review the news story** (*click to open detailed description*)

► **Four Months Ago: Siemens Energy Announces 7 Billion Euro Wind Power Deal**

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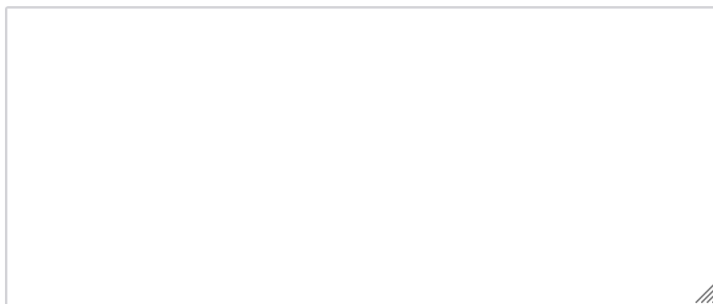
For the following investment ...

Invest \$1,000 in Siemens Energy stock today, **several weeks after the announcement was made.**

Sell these stocks in twelve months from now.

... you responded that you expect a **return of -3%**.

**Please explain why you expect this return.**



## An investment decision

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**Review the news story** (*click to open detailed description*)

► **Four Months Ago: Siemens Energy Announces 7 Billion Euro Wind Power Deal**

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In the following, we ask you to make a decision on how you would invest £100 for the coming 12 months.

You have the **chance to earn additional money** with your answer to this question. Upon completion of the study, we will randomly select ten participants who will receive a payout equal to the value of their investment after 12 months. If you are selected, this payout will depend on your investment decision, so please consider carefully. The payout will be made in 12 months (plus processing time) in the form of a Prolific bonus payment.

Two investment options are available:

- **Investing in a stock of the company *Siemens Energy*.** The return on your investment in Siemens Energy stock will be based on the actual return of this stock over the coming 12 months.
- **Investing in a savings bond that pays 2 percent interest per year for sure.** The return on your investment in the savings bond will be 2 percent for sure.

**Please decide. How much of the £100 do you invest in *Siemens Energy* stock and how much in the savings bond?**

(Note: The sum of your investments must amount to £100.)

My investment in the stock of <i>Siemens Energy</i>	£ <input type="text" value="0"/>
My investment in the savings bond	£ <input type="text" value="0"/>
Total	£ <input type="text" value="0"/>

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**When responding to this survey, did you look up any information regarding Siemens Energy or the Siemens Energy stock online, e.g., via Google?**

Yes

Yes, but I could not find any information

No

# Bad news scenario

## Two Months Ago: Siemens Energy Retracts Forecast Amid Wind Turbine Crisis

About two months ago, Siemens Energy made an announcement that received a lot of attention among stock market traders. Here is a summary of the news story.

Siemens Energy is grappling with a crisis due to complications in its wind turbine business. The company has retracted its annual forecast, warning of additional costs in the billions of euros. During a call with analysts, Siemens Energy CEO Christian Bruch admitted that the setback is more severe than he had anticipated. Technical checks on Siemens Energy's wind turbines have revealed "significantly increased" failure rates, with interim reports suggesting that many turbines will need to be replaced or repaired at a cost exceeding one billion euros.

The challenges extend beyond technical issues; productivity improvements in the wind energy business have also fallen short of expectations. Additionally, Siemens Energy highlighted ongoing difficulties in ramping up manufacturing capacities in the offshore wind sector. As a result, Siemens Energy has retracted its profit forecast for the current fiscal year. Some experts started questioning whether Siemens Energy's wind turbine business is even capable of recovery.

Recall: This news story broke around two months ago and received a lot of attention among stock market traders invested in or observing Siemens Energy's stock.

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## Quiz

Please select all correct statements in the following list. Do not select any incorrect statements.

Siemens Energy has maintained its initial annual profit forecast for the current fiscal year.

Siemens Energy has retracted its annual forecast and expects additional costs in the billions of euros.

The announcement was made about two months ago.

The announcement was made earlier today.

The announcement did not receive a lot of attention among stock market traders.

The announcement received a lot of attention among stock market traders.

Siemens Energy's CEO Christian Bruch stated that the setbacks in the wind turbine sector are more severe than initially expected.

Siemens Energy's CEO Christian Bruch stated that the situation was anticipated and under control.