

# COARSE CATEGORIES IN A COMPLEX WORLD: EXPERIMENTAL INSTRUCTIONS

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Figure 1: Instruction Screen 1

## Instructions

### Your Task

In this study, you will be asked to predict the immediate reaction of different companies' stock prices between their quarterly earnings announcements and end of day trading the same day.

- A company's quarterly net income is typically reported in terms of "earnings per share," which is the net income divided by the number of outstanding shares.
- Before every quarterly earnings announcement, analysts predict the company's earnings per share, and the mean of those predictions is referred to as the **consensus analyst forecast**. The forecast is important as it establishes a benchmark for assessing the company's actually reported earnings.
- The consensus forecast reflects the level of earnings that market participants already expect and have accounted for in the stock price prior to the actual announcement.
- This means: on the day of the announcement, the market reacts to **how actual earnings compare to the forecast**, i.e., to the difference between predicted and actual earnings. Put differently, if the announced earnings are **the same** as the forecast earnings, the stock price should not change much after the announcement.
- The stock price is commonly understood to be determined by the expected stream of a company's future earnings. A quarterly earnings announcement provides insights into this future stream of earnings: higher-than-expected earnings in the last quarter can be indicative of higher-than-expected earnings in the future, and lower-than-expected earnings last quarter can be indicative of lower-than-expected earnings in the future.
- Therefore, **even small differences** between the expected and announced earnings in a single quarter **can significantly impact the stock price**, because market participants react to what they believe this implies for all future earnings.
- Historically, quarterly earnings per share averaged to a percentage of the current stock price that **equals about \$0.30 per \$100 of stock value**.
- In total, you will complete 5 rounds of this task, where each round is about a different company. These rounds are completely independent from one another.

### Example

Below you see a screenshot of an example showing the beginning of an earnings announcement.



### Your Bonus Payment

- One of every ten participants in this survey is eligible to win a **bonus of \$50**.
- If you are randomly selected to be eligible for a bonus, one of the rounds will be randomly picked as the round-that-counts.
- In each round, you will predict the stock price change of a real company that will announce their quarterly earnings by the end of this week. For each firm, you will see one scenario showing a potential earnings announcement.
- On one day later this week, the firm will announce their earnings per share, and we will record the difference between the stock price right before the announcement and the closing price at the end of that same day.
- **You win \$50 if (i)** the actually announced earnings per share are within 10% of the earnings per share reported in your scenario **and (ii)** your estimate in the round-that-counts is within 1 percentage point of the real price change recorded on the day of the announcement.

Next

This is the main instructions screen in the experiment. This screen is visible to both the Baseline and High Constraints conditions.

Figure 2: Instruction Screen 2

### Comprehension check

*You have to answer all comprehension questions correctly within the first two trials in order to receive your completion reward.*

You can review the instructions [here](#).

1. Which one of the following statements is true?

- ☐ The market primarily responds to the level of announced earnings.
- ☐ The market primarily responds to how the announced earnings compare to the consensus forecast of earnings, because market participants already incorporate the level of expected earnings in their valuations before the announcement.

2. Which one of the following statements is true?

- ☐ The difference between forecast and announced earnings in a given quarter may provide insights on the entire future stream of earnings. Therefore, even small quarterly earnings surprises can have significant effects on the stock price.
- ☐ If the quarterly announced earnings per share look small relative to the stock price, they should not affect the stock price.

3. Which of the following two statements are true?

- ☐ If the announced earnings are **the same** as the forecast earnings, the stock price should not change much after the announcement.
- ☐ If the announced earnings are **the same** as the forecast earnings, the stock price should increase a lot after the announcement.

Next

This is the first comprehension question screen in the experiment. Respondents who do not answer the questions correctly in the first two attempts are disqualified from the survey. This screen is visible to both the Baseline and High Constraints conditions.

Figure 3: Instruction Screen 3

Before the first round starts, please answer the following estimation questions.

*Answer these question as follows: First, select whether you estimate an increase or decrease using the dropdown menu. Second, enter a number to indicate the magnitude of the increase or decrease. For a 1% increase, select "increased" and enter the number 1; for a 5.7% decrease, select "decreased" and enter the number 5.7 etc.*

**Firm X Falls Short Of Market Expectations**

Historically, what do you think was a company's **average stock price change** on a day where **announced earnings fell below the consensus forecast?**

It  by %.

**Firm X Beats Market Expectations**

Historically, what do you think was a company's **average stock price change** on a day where **announced earnings exceeded the consensus forecast?**

It  by %.

Next

This screen elicits respondents' priors to a positive or negative earnings surprise. This screen is visible to both the Baseline and High Constraints conditions.

Figure 4: Instruction Screen 4 (High Constraints)

**Additional information:**

You only have **40 seconds to submit your estimate** in each round! If you fail to submit your prediction within the time limit in any round, your bonus will be zero if that round is later selected as the round-that-counts. This is very little time so you have to decide quickly. Note: For most people, 40 seconds are not enough time to read the entire earnings announcement.

Next

This instruction screen is visible only to the High Constraints condition.

Figure 5: Instruction Screen 4 (Baseline)

### Additional information:

You can take as much time as you need to make your prediction.

Next

This instructions screen is visible only to the Baseline condition.

Figure 6: Instruction Screen 5

### Additional comprehension check

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*You have to answer the comprehension question correctly to proceed.*

#### Which of the following statements is true?

I can take as much time as I need to make my prediction.

I only have 40 seconds in any given round to submit my prediction. If I take longer in a given round and this round is selected as the round-that-counts, my bonus will be zero.

Next

This is the second comprehension question screen in the experiment. Respondents cannot continue to the next screen until they answer the question correctly. They have unlimited attempts to answer correctly. This screen is visible to both the Baseline and High Constraints conditions.

Figure 7: Decision Screen (High Constraints)

Scenario 1/5

[Click here](#) to re-read the instructions.

Time remaining: 40 seconds

To earn a bonus you have to submit your guess before the timer runs out.

Paychex Falls Short Of Market Expectations

Paychex, Inc. is an American company that provides human resources, payroll, and employee benefits outsourcing services for small- to medium-sized businesses. Founded in 1971 and headquartered in Rochester, New York, the company has more than 100 offices serving approximately 740,000 payroll clients in the U.S. and Europe. Paychex is ranked 681st on the Fortune 500 list of largest corporations by revenue. Paychex was founded in 1971 by Tom Golisano, who started the company with only \$3,000. The operation grew to include 18 franchises and partnerships, which were eventually consolidated into one private company in 1979. In 1983, the company became a public company via an initial public offering. Paychex and IHS Markit launched a Small Business Jobs Index in 2014 that measures the health of businesses employing 50 people or less. Today, the Paychex I IHS Markit Small Business Employment Watch shares small business jobs data going back to 2005 and wage data from 2011 to present. The Employment Watch is frequently used by financial experts, analysts, and journalists assessing the economic outlook. Paychex CEO Martin Mucci regularly appears in the media to provide analysis of Small Business Employment Watch data, as well as insight into what the health of Paychex as a company says about the health of small business and the economy in general. In their earnings announcement for the third quarter of 2024, Paychex reported earnings below market expectations. Trading at a stock price of \$140.16 prior to the announcement, Paychex reported earnings per share of \$1.05. Paychex therefore earned 6.25% less than analysts expected, given the consensus forecast of \$1.12 earnings per share. Paychex established the Paychex Charitable Foundation in 2014 as the vehicle for its charitable contribution efforts. Through the Foundation, they provide monetary support to initiatives that support economic development in the communities where the company has operations, while also enhancing the quality of life for those who work and live in these communities. In addition to more formal company-sponsored campaigns or events, Paychex employees give back to their local communities by organizing grassroots efforts, such as fundraisers, gathering donations for local charities, or volunteering their time. For a three-week period each year (except FY 2021), Paychex offices across the U.S. buzz with the activity of the annual United Way campaign. Championed by a different Paychex executive each year, who serves as the company campaign chair, employees at each location form committees to run their local campaign; attend kickoff meetings to learn more about United Way's efforts in their local communities; participate in office fundraisers like bake sales, raffles, and auctions; and make confidential donations through an online pledge site, which allows the option of payroll deductions for their contribution.

How do you think the stock price will change between this announcement and the end of the day of this announcement?

I predict that the **stock price** will 

Select

 by  % between this announcement and the end of the day of this announcement.

This is a screenshot of the decision screen for the High Constraints condition in the experiment.

Figure 8: Decision Screen (Baseline)

Scenario 2/5

[Click here](#) to re-read the instructions.

Paychex Beats Market Expectations

Paychex is an American company that provides human resources, payroll, and employee benefits outsourcing services. In their earnings announcement for the third quarter of 2024, Paychex reported earnings exceeding market expectations. Trading at a stock price of \$140.16 prior to the announcement, Paychex reported earnings per share of \$2.52. Paychex therefore earned 125.00% more than analysts expected, given the consensus forecast of \$1.12 earnings per share.

How do you think the stock price will change between this announcement and the end of the day of this announcement?

I predict that the **stock price** will 

Select

 by  % between this announcement and the end of the day of this announcement.

This is a screenshot of the decision screen for the Baseline condition in the experiment.