

# *Trailblazers, Heroes, and Crooks: Did Ronaldo Move the Stock Market?*

Presenter: Steve Foerster

Investment Innovation Conference – Vancouver BC, November 14, 2024

# The best soccer players (subjective)

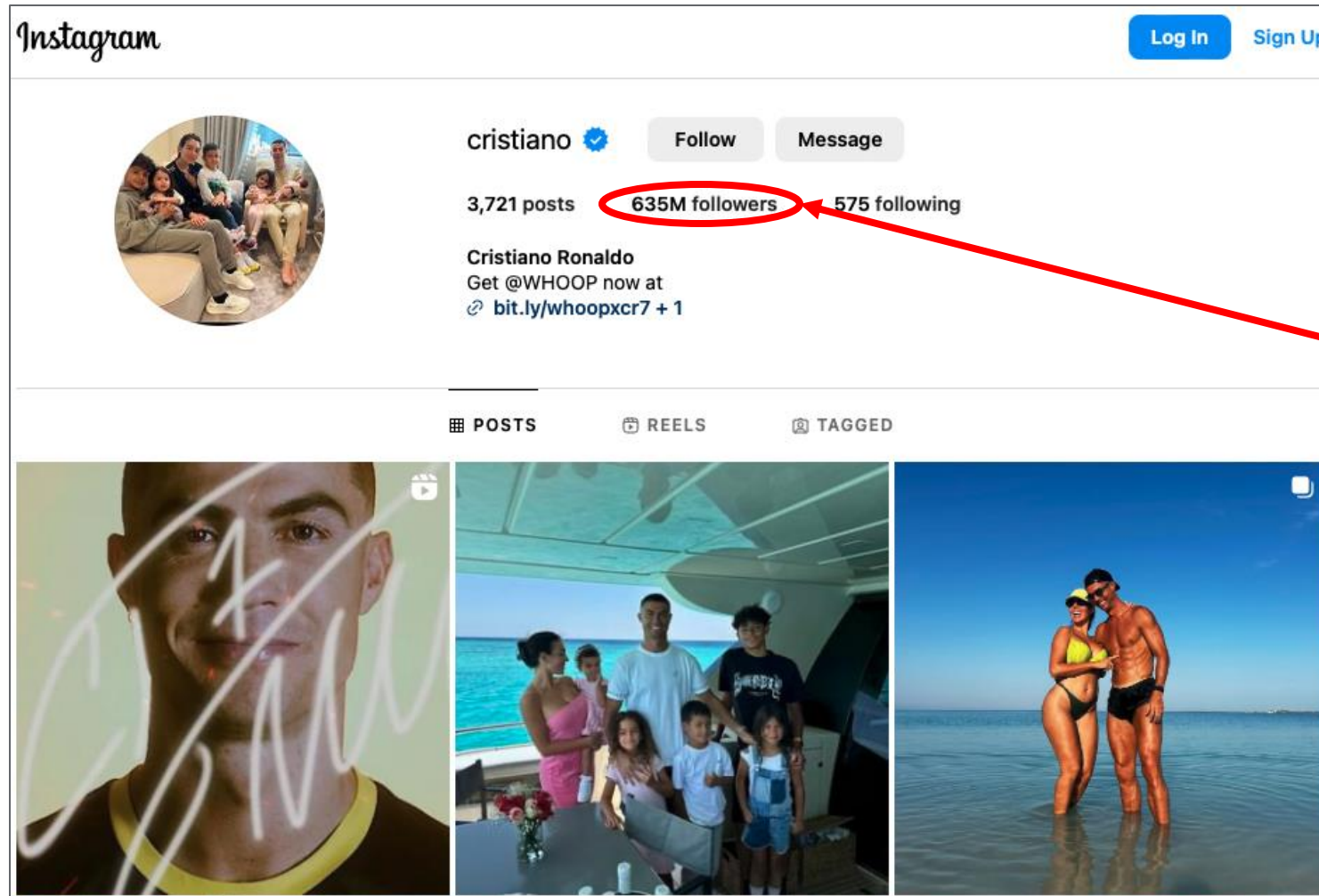


- Who were some of the best professional soccer players (active in 2020)?
  1. Lionel Messi (Argentina)
  2. Cristiano Ronaldo (Portugal)
  3. Neyamer (Brazil)
  4. Robert Lewandowski (Poland)
  5. Kylian Mbappé (France)



<https://www.lineups.com/articles/top-10-best-soccer-players-in-the-world/>

# Is Ronaldo an “influencer”? (objective: Instagram\*)

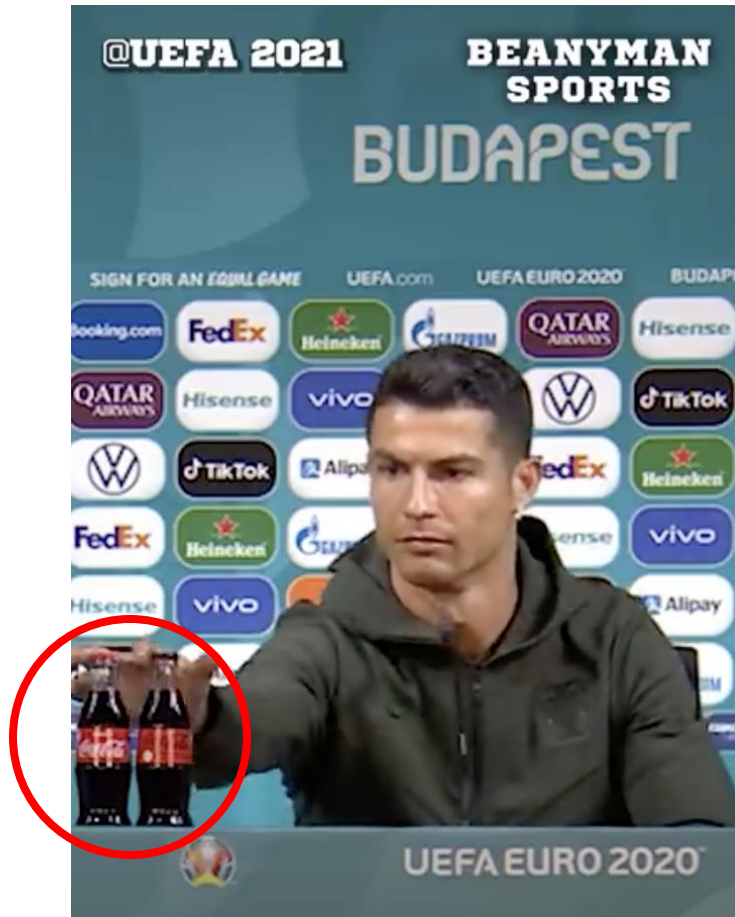


635M: most  
Instagram  
Followers  
In the world!

Lionel  
Messi:  
“only” 504M



# 2020 European Championship Ronaldo press conference, June 14, 2021



<https://www.youtube.com/watch?v=nw7FOgOgtA>



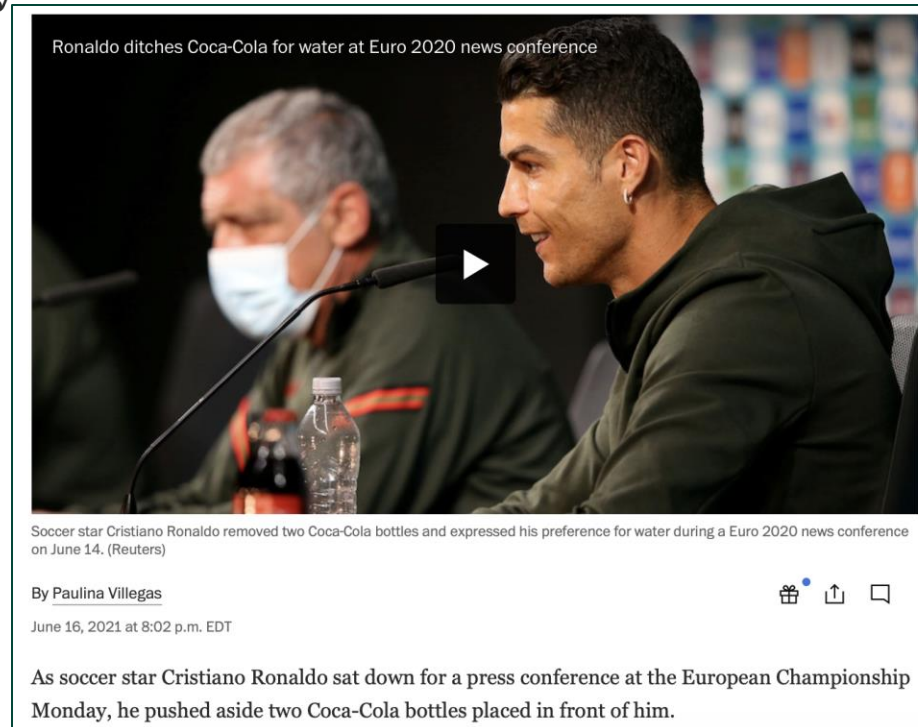
**“Água. No Coca-Cola.”**

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# What happened to Coca-Cola stock on June 14, 2021?



## Cristiano Ronaldo snubbed Coca-Cola. The company's market value fell \$4 billion.



<https://www.washingtonpost.com/sports/2021/06/16/cristiano-ronaldo-coca-cola/>

Steve Foerster, Ivey Business School at Western University

# Washington Post article

By **Paulina Villegas**

June 16, 2021 at 8:02 p.m. EDT



As soccer star Cristiano Ronaldo sat down for a press conference at the European Championship Monday, he pushed aside two Coca-Cola bottles placed in front of him.

cause

“Água,” he said in Portuguese, picking up a bottle of water and seemingly encouraging others to do the same. “No Coca-Cola.”

The simple gesture had a swift and dramatic impact: The soft drinks giant’s market value fell \$4 billion, highlighting the power and impact that celebrities and influencers can have on the market.

effect

The 36-year-old Juventus star, who has almost 300 million followers on his personal Instagram account, is known for maintaining strict physical and eating regimens and has previously criticized the consumption of soft drinks.

The company’s share price dropped from \$56.10 to \$55.22 quickly after Ronaldo’s slight, marking a 1.6 percent fall. The market value of Coca-Cola went from \$242 billion to \$238 billion, according to Nasdaq index and the New York Stock Exchange.

<https://www.washingtonpost.com/sports/2021/06/16/cristiano-ronaldo-coca-cola/>

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# On a different note...who owns dividend-paying stocks?

- Typical dividend payment cycle: quarterly
- Ex-dividend date:
  - Anyone who becomes a new owner of shares on or after that date doesn't receive the upcoming dividend
  - Dividend usually scheduled to be distributed a couple of weeks after the ex-dividend date

# What happens to the stock price on ex-dividend date?

- Example:
  - May 1: Stock is selling for \$10
  - Upcoming dividend of \$1 to be paid on May 15
  - May 2: Stock starts trading ex-dividend... **at what expected price??**
- → Expect stock price to drop to **\$9** at start of trading on May 2
  - No surprise since the stock price should reflect expected cash flows to you



# A real example of the ex-dividend day effect

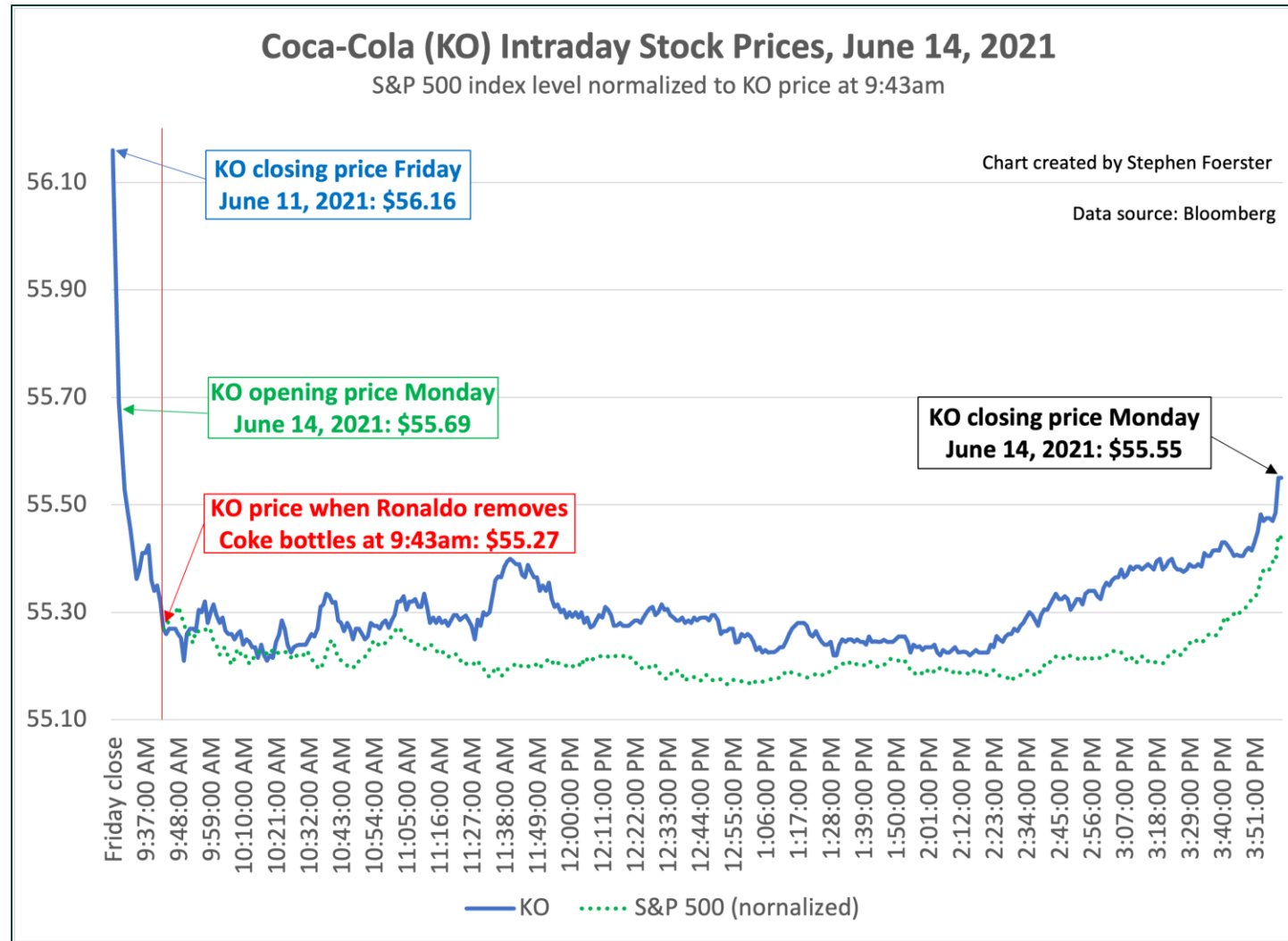
- Stock closes on Friday at \$56.16/share
- Upcoming dividend of \$0.42/share
- Monday stock trades ex-dividend → Expected **opening price** of  $\$56.16 - \$0.42 = \$55.74$ , absent any new information over the weekend
- Actual Monday opening price = \$55.69 (close to expected)
- What else drives stock prices:
  - Growth expectations
  - Risk

**Coca-Cola stock (KO)**

**9:30am ET, Monday, June 14, 2021**

**Just before Ronaldo's press conference**

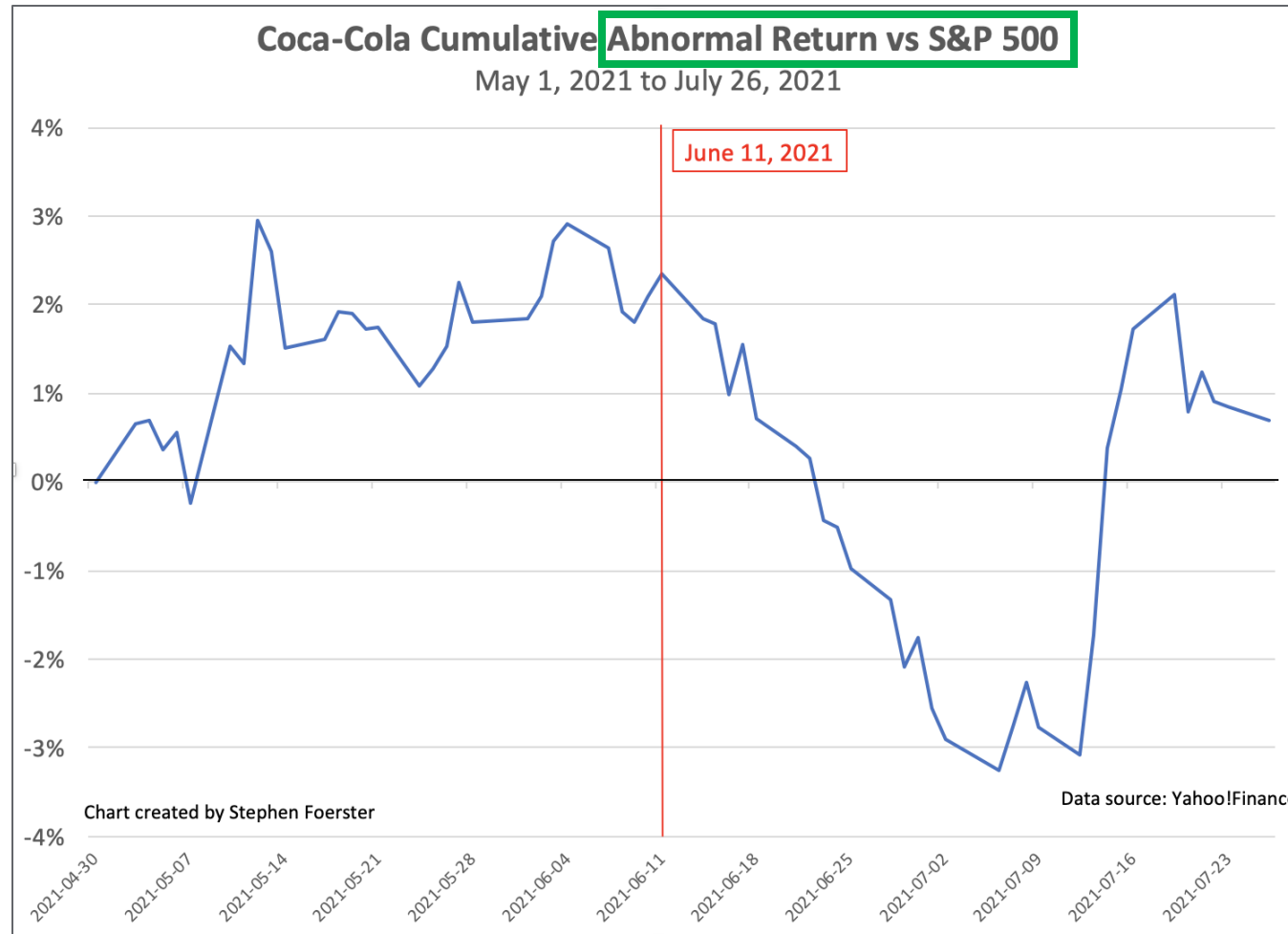
# Coca-Cola stock: What really happened on June 14, 2021\*



**After the snub,  
KO gained \$1.2b!**

\*See: Nuno Fernandes, "A Post-Truth World: Why Ronaldo Did Not Move Coca-Cola Share," Forbes, June 19, 2021  
Steve Foerster, Ivey Business School at Western University

# What happened to Coca-Cola stock over next 6 weeks?



Adjusted for ex-dividend effect

What can we infer?  
Based on the stock return pattern, Ronaldo's snub may have had a short-term and temporary negative price effect but there wasn't any long-term impact

# Washington Post article – revisited

By Paulina Villegas

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**No, it didn’t!**

<https://www.washingtonpost.com/sports/2021/06/16/cristiano-ronaldo-coca-cola/>

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# A different example: An attractive investment strategy\*

Prediction in January for annual stock market performance

Green = model correct  
Red = model incorrect

Year	Prediction	% Annual Change	
		S&P 500	DJIA
1967	Advance	20.1	11.9
1968	Advance	7.7	7.4
1969	Decline	-11.4	-15.2
1970	Decline	0.1	4.8
1971	Advance	10.8	6.1
1972	Advance	15.6	14.6
1973	Decline	-17.4	-16.6
1974	Decline	-29.7	-27.6
1975	Advance	31.5	38.3
1976	Advance	19.1	17.9
1977	Decline	-11.5	-17.3
1978	Advance	1.1	-3.2
1979	Advance	12.3	4.2
1980	Advance	25.8	14.9
1981	Decline	-9.8	-9.8
1982	Advance	13.2	19.6
1983	Advance	15.0	20.3
1984	Decline	3.4	-3.7
1985	Advance	26.3	27.7
1986	Advance	14.6	22.6
1987	Advance	2.0	2.3
1988	Advance	12.4	11.8
Predict: Advance		15.2	16.0
Predict: Decline		-12.2	-10.9
Accuracy	% Correct	91%	91%

Given the prestige of the journal and the strong results, would you be inclined to invest in this strategy?

\*Thomas Krueger and William Kennedy, *Journal of Finance*, June 1990

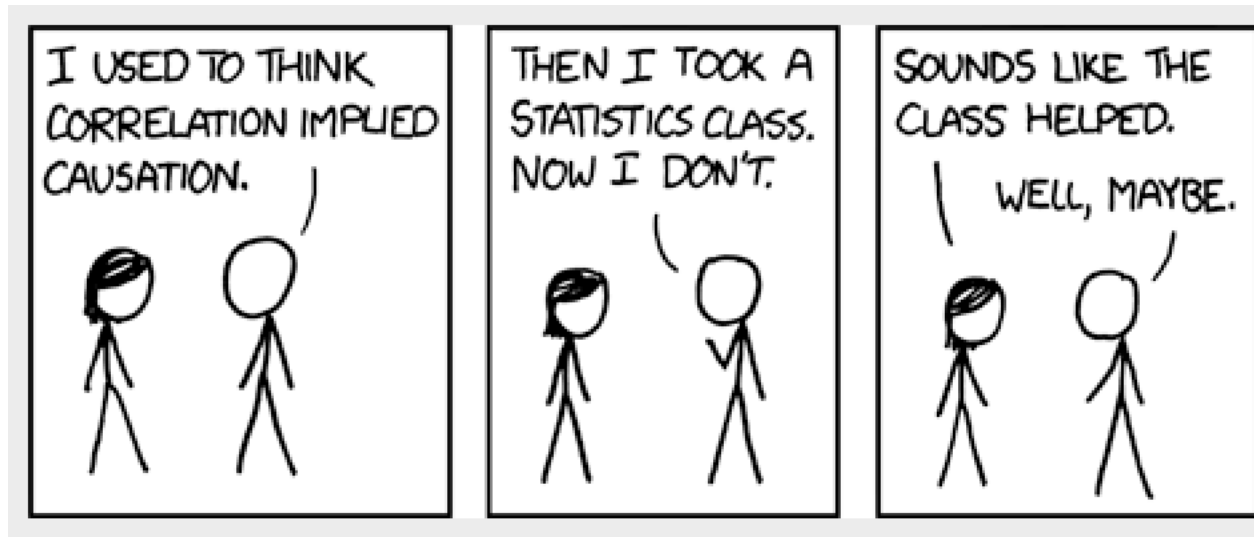


# Revealed: The Super Bowl stock market predictor

- Investment strategy:
  - Invest in the S&P 500 if an NFC (or original NFL) team wins the Super Bowl
  - Don't invest (or short) if an AFC (or original AFL) team wins
- Strategy accuracy:
  - 1967-1988:  $20/22 = 91\%$
  - 1989-2023:  $18/35 = 51\%$ , or a coin-toss



# Correlation versus causation



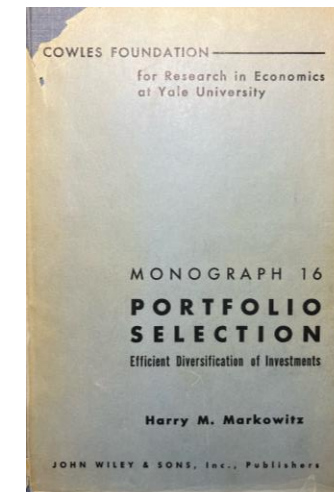
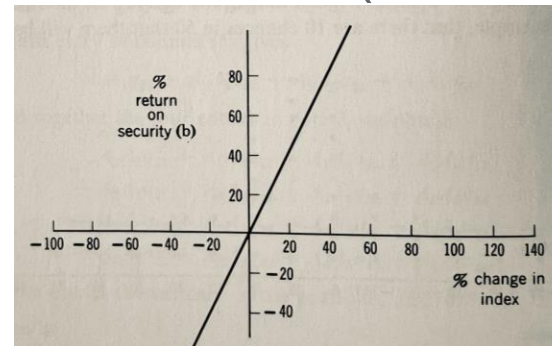
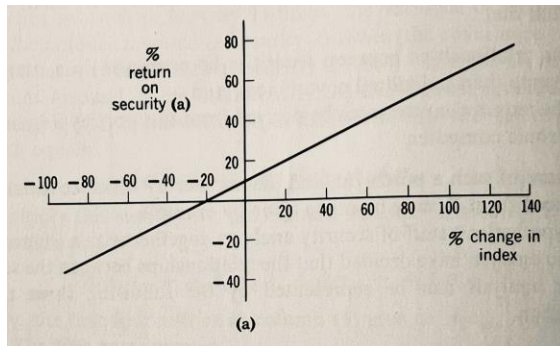
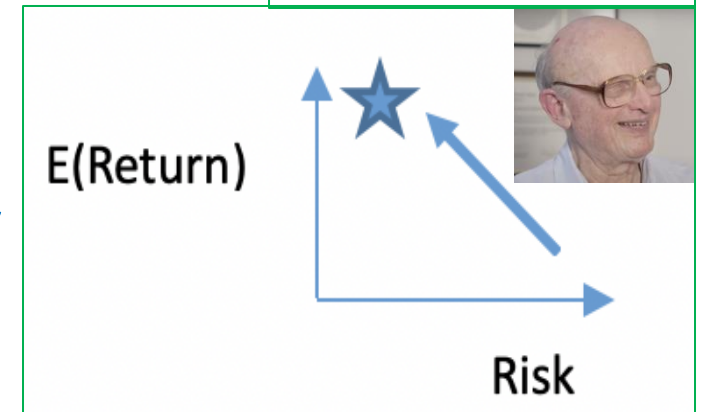
Source: xkcd <https://xkcd.com/552/>, CC BY-NC 2.5

- Just like shoe size and IQ, correlation does **NOT** imply causation!!

# Why correlations matter: Diversification and betas

- Markowitz (1952, 1959): diversification pays
  - There is a “free lunch” by holding more than one (not perfectly correlated) security—a better expected return for a given level of risk (or lower risk for a given level of expected return)
- Markowitz (1959, p. 98): talked about the correlation of securities relative to an index—“beta” (unnamed)

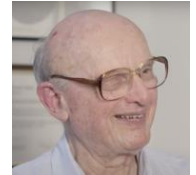
Harry Markowitz



# Why correlations matter: The factor zoo



- Markowitz (1959, p. 100): first proposed the idea of factor models:
  - *“Rather than having just one underlying factor, the general prosperity of the market as expressed by some index, the analysis could have several underlying factors.”*
- Sharpe (1963, 1964): popularized factor models
  - The capital asset pricing model (the C-A-P-M) with beta ( $\beta$ ) as the market factor; *“[A]ll would attempt to purchase only those risky assets which enter [the market portfolio].”*
- Cochrane (2011): “factor zoo” to describe the proliferation of factors
  - *“In the beginning there was chaos...Then came the CAPM... Then anomalies [e.g., the value effect] erupted, and there was chaos again.”*



# Key take-aways about correlations

- Don't ever confuse correlations with causation
- Correlations matter: Diversification among assets (or asset classes) that aren't perfectly correlated can reduce the overall volatility of a portfolio—the ultimate diversification is through owning a share of all investable asset
- When it comes to factor models, be wary of spurious correlations: There should be a careful examination of data and a plausible causation story—but even then, there are no guarantees of future performance



## And about Ronaldo's water bottle...



- It was a Coca-Cola product!

# Trailblazers, Heroes, and Crooks: Stories to Make You a Smarter Investor

- For more information, and to sign-up for my *Everything Investing* newsletter visit:  
[StephenRFoerster.com](https://StephenRFoerster.com)

