Columbia Business School

Capital Markets & Investments

Session 3: Securities and Valuations

Spring 2025

Professor Simon Oh

Assignment 1: Due 2/11 (Next Tuesday)

Columbia Business School

- Make sure to sign up as groups under "People"
  - You can work across sections (007 and 008)

- Math Review
  - Asset properties: $E[r] = 5\%, \ vol(r) = \sigma(r) = 10\%$
  - If we invest $20K in this asset, then:

$$E[\$20K{\times}r] = \$20K{\times}E[r] = \$20K{\times}5\% = \$1K$$

$$vol(\$20K{\times}r) = \$20K \times vol(r) = \$20K \times 10\% = \$2K$$

Recap

- **Role of financial markets**

- **Investors' goals and motives**

- **Leverage and short selling**

Spring 2025 FAQ:

▼ Session 02 (Markets 2 — Investing)
  ▶ Review: Mechanics of a Margin Call (Long Example)
  ▶ Review: Mechanics of a Margin Call (Short Example)
  ▶ Can you short treasuries?
  ▼ How can short interest exceed 100%?

  Recall the definition of short interest = shares sold short / shares outstanding.

  1. Investor A owns 100 shares of a stock and lends them to a short seller (Investor B).
  2. Investor B shorts the 100 shares—sells them to Investor C.
  3. Investor C now owns the shares and can lend them out again to another short seller (Investor D).
  4. Investor D shorts those same 100 shares, and the cycle repeats.

Example of an Individual Investor
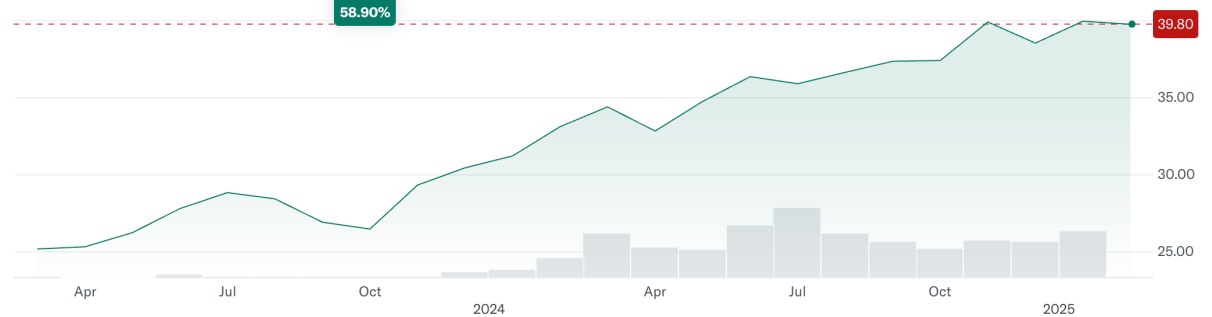
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Learning from Trades

What stock is Nancy Pelosi buying?

Pelosi purchased 50 call options (a bet that a stock will rise) for Tempus AI (**TEM**) on Jan. 14, with a strike price of $20 per share. Each options contract typically represents 100 shares of the underlying stock.

Related: A popular congressman just bought these tech stocks

The overall trade value was between $50,000 and $100,000.

Tempus AI stock rallied more than 40% in two days following the disclosure.

Pelosi's other investments included buying call options in Alphabet (**GOOGL**) , Amazon (**AMZN**) , Nvidia (**NVDA**) , power generation company Vistra (**VST**) , and cybersecurity firm Palo Alto Networks (**PANW**) .

Front-running Trades

ETF Hub **Exchange traded funds** (+ Add to myFT)

Passive ETFs hit by billion-dollar rebalancing costs

Research shows US index trackers lose out on nearly $4bn a year due to price moves created by front-running

More opaque ETFs with portfolios that are less predictable fare better than their totally transparent counterparts © FT montage; Bloomberg