1) Research question

Do firm-quarter differences in **tariff-related sentiment** expressed in earnings **reports** and **call transcripts** predict **excess announcement-window returns**, **controlling for the earnings surprise**?

2) Sample & horizon

- **Universe:** S&P 500 constituents, **rolling membership** (avoid survivorship).
- **Horizon:** The most recent **8 fiscal quarters** per firm.
- **Announcements:** Earnings **press release timestamp** and **earnings call start time** (needed for exact event windows).

3) Data you'll need (and typical sources)

- **Prices:** CRSP (daily), with share codes filters; delisting returns.
- **Factors:** Fama-French 3/5 factors (daily) or at minimum the market factor for CAPM.
- **Earnings surprises:** I/B/E/S (actual vs. consensus EPS; optionally revenue surprise).
- **Transcripts & reports:** FactSet/Refinitiv/AlphaSense/SeekingAlpha/S&P CIQ (ensure licensing for research).
    - Press release text (the "earnings report").
    - Call transcript text (prepared remarks + Q&A) with timestamps.
- **Firm attributes (controls):** GICS sector, size, book-to-market, momentum (optional robustness).
- **(Optional exposure controls):** Firm tariff exposure proxies (import share from HS codes, China revenue share, etc.) for robustness / heterogeneity tests.

4) Outcomes and event windows

Compute **cumulative abnormal returns (CAR)** around the announcement:

- Pick **one primary window**, e.g. **[0, +1]** in trading days using the **press release time** to align day 0 correctly (if after market close, day 0 may be next trading day; be consistent).
- Robustness: [-1,+1], [0,+2], using the **call start time** as an alternate anchor.

Abnormal returns via:

- **Market model:** $AR_{i,t} = R_{i,t} - \hat{\alpha}_i - \hat{\beta}_i R_{m,t}$ with $(\hat{\alpha}_i, \hat{\beta}_i)$ estimated over an **estimation window** like

[0. +1] trading days relative to the announcement. Alternatively, instead of the market model/CAPM/single-factor model, use the Fama-French Five Factor Model returns as your forecast returns.

See the following website for the Fama/French 5 Factor returns.

- Then **CAR** = $\sum_{t \in \text{window}} AR_{i,t}$.

5) Core regressor: tariff sentiment

You need **topic-specific sentiment**, not overall tone.

5.1 Identify tariff spans

- Build a **tariff lexicon** and **semantic matcher**:
  - Keywords: tariff*, duty, lev(y|ies), quota, Section 301, countervailing, anti-dumping, import tax, customs, decoupling, retaliatory, exemptions, exclusions, harmonized codes, etc.
  - Expand with **embedding similarity**: retrieve top-k sentences similar to seed queries ("tariffs on imports", "tariff headwinds/tailwinds", "duty relief", "exclusion expired"), using a sentence-embedding model (e.g., all-MiniLM-L6-v2) to avoid missing paraphrases.
- Unit of analysis: **sentence** (or 2-sentence window) containing a tariff hit.

5.2 Sentiment on those spans

- Use a finance-aware sentiment classifier for sentences (e.g., **FinBERT** or a domain-tuned RoBERTa).
- Score each tariff sentence sss as **pos/neg/neu** or **polarity** $\in[-1,1]\in[-1,1]\in[-1,1]$. Handle **negations/intensifiers** (the model largely does).
- Compute firm-quarter metrics, separately for reports and calls:
  - **TariffSent_mean**: mean polarity across tariff sentences.
  - **TariffSent_shareNeg**: share negative among tariff sentences.
  - **TariffMentions**: count (for exposure/probability of mention).
  - **Forward-looking tariff tone**: restrict to sentences with future cues (e.g., "expect", "guidance", "outlook", "plan", "will", "next quarter/year").
  - **Q&A vs prepared**: split sentiment by section if available.

Pick one **primary measure** (e.g., **TariffSent_mean** in calls' **prepared remarks**) and keep others for robustness.

6) Key control: earnings surprise

- **Standardized unexpected earnings (SUE)** or a simple **EPS surprise** (% of price) using I/B/E/S:

$$\text{Surprise}_{i,q} = \frac{\text{EPS}_{i,q}^{\text{act}} - \text{EPS}_{i,q}^{\text{cons}}}{|\text{Price}_{i,\text{pre}}|}$$

or z-score the difference by cross-sectional dispersion (SUE).

- Optional controls: **revenue surprise**, **guidance issuance** dummy, **call length**, **number of Q&A questions** (communication intensity).

7) Econometric specification

Cross-section (or panel) event-study regression by firm-quarter:

- $$\text{CAR}_{i,q}^{[0,+1]} = \alpha + \beta_1 \, \text{TariffSent}_{i,q} + \beta_2 \, \text{Surprise}_{i,q} + \beta_3 \, \text{TariffMentions}_{i,q} + \gamma' \mathbf{X}_{i,q} + \delta_{\text{sector}} + \delta_{\text{quarter}} + \varepsilon_{i,q}.$$

  $\mathbf{X}_{i,q}$: size, momentum, volatility pre-window; call/report dummies; after-hours release dummy.
- **Fixed effects:** sector (GICS-2 or GICS-4) and **calendar quarter FE** to absorb macro/tariff-news cycles.
- **SEs:** cluster by **firm** and **quarter** (two-way) or at least by firm.

Interpretation: β1 is the incremental announcement CAR associated with more positive tariff-specific tone, **holding the earnings surprise constant**.

Robustness
- Replace CAR model (FF3/FF5 vs market model).
- Alternate **windows** and **tariff tone definitions** (Q&A-only, forward-looking only).
- Add **firm tariff exposure × tariff tone** interaction: does tone matter more for highly exposed firms?
- **Placebo:** use **non-tariff** topic sentiment (e.g., FX) to show specificity.
- **Heckman selection / IPW** if transcripts missing non-randomly.
- **Winsorize** extremes (top/bottom 1%).

8) "Portrayal" deliverables (descriptive analytics)

Before causal-ish regressions, show how portrayal evolved:
- **Time-series** of average tariff sentiment by quarter (reports vs calls).
- **Sector heatmap** of TariffSent_mean.
- **Wordshifts** or key phrases for negative vs positive tariff quarters.
- **Prepared vs Q&A** divergence: often tariff concerns appear more in Q&A.

9) Repro-ready variable dictionary

- ann_time_{i,q}: timestamp of press release.
- call_time_{i,q}: call start timestamp.

- CAR_[window]_{i,q}: from market/FF model.
- Surprise_EPS_{i,q} (primary), Surprise_REV_{i,q} (optional).
- TariffSent_mean_report_{i,q}, TariffSent_mean_call_{i,q}.
- TariffMentions_{i,q}.
- TariffSent_fwd_{i,q} (forward-looking subset).
- Controls: size, bm, mom_12_2, ivol, after_hours_dummy, qa_share.

10) Identification notes (what this does & doesn't claim)

- This is an **event-study association**. Controlling for surprise helps isolate incremental information embedded in tariff tone, but **tone is still managerial speech** and could proxy for private information or firm conditions.
- You **mitigate** confounds via:
    - Tight event windows, FE by quarter & sector, and rich controls (guidance, Q&A intensity).
    - Robustness on timing (press release vs call).
    - Exposure interaction: show effects are stronger where tariffs plausibly matter more.
    - Placebo topics.

11) Practical pitfalls & tips

- **Timestamp precision** is crucial (after-hours vs pre-open).
- **Press release vs 8-K**: keep the exact text used in markets.
- **Transcripts coverage** is uneven; document your coverage rate and handle selection.
- **Legal**: ensure your transcript source permits text mining for research.
- **Preprocessing**: remove boilerplate (safe harbor, operator intros) to avoid biasing tone.
- **Outliers**: cap extreme CAR and surprise values.

12) What to report

1. Descriptives: tariff mention rates & sentiment by quarter/sector and by report vs call.
2. Main table: CAR on TariffSent + Surprise with FE and clustered SEs.
3. Robustness suite and exposure heterogeneity.
4. Interpretable snippets: top positive/negative tariff sentences (anonymized) to illustrate "portrayal."