| **R² Range** | **Interpretation** |
| --- | --- |
| 0.3 - 0.5 | Strong — News and time explain stock movements quite well. |
| 0.1 - 0.3 | Moderate — Some predictability, but lots of noise. |
| < 0.1 | Weak — Stock movements are mostly random or driven by other factors not captured (like earnings reports, macro events). |

We conducted regression analysis to predict stock returns using FinBERT-based textual embeddings and time block count.  
The R² values varied across companies, indicating differences in how sensitive their stock returns are to news flow.

For instance, companies …… exhibited relatively strong R² values (>0.2), suggesting that **news sentiment combined with time structure** can meaningfully predict short-term stock returns.

In contrast, companies like **…….** had low R² values (<0.1), indicating that their returns are **either more random** or influenced by **external factors not captured by the news embeddings**, such as broader market movements or macroeconomic events.

These findings imply that **news-driven trading strategies** may be more effective for certain companies where the connection between news and price is stronger.

Interpretation Insights:

| **Part** | **What it means** |
| --- | --- |
| High R² (>0.2) | News + Time Block predict returns moderately well — focus here! |
| Low R² (<0.1) | Stock is noisy/random — news alone is not enough |
| Faceted plots | Let you visually verify model performance company-by-company |
| Combined plot | See overall trends and model behavior |
| Table | Easy quantitative ranking of model strength |