Group7
313554043 戴明貴
313551047 陳以瑄
110705009 陳重光

ENHANCED MARKET-GUIDED STOCK TRANSFORMER
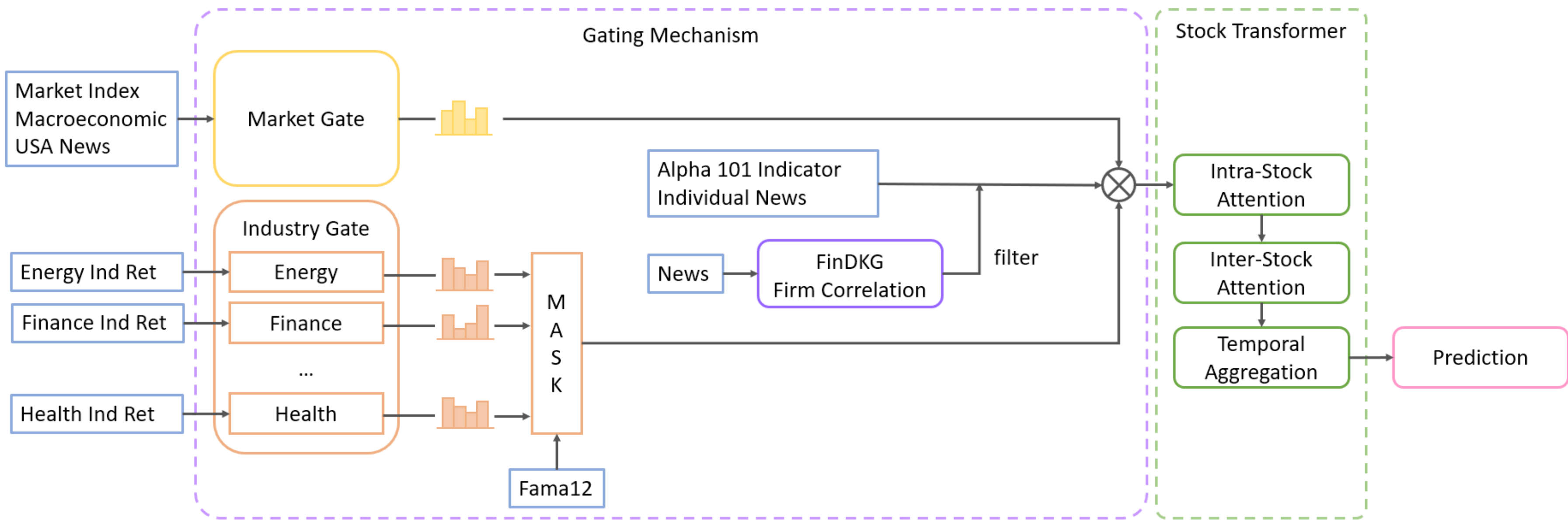
MOTIVATION

Why Stock Transformer?
- Stock returns are influenced by individual stock histories, cross-stock correlations and market-wide effects.
- These correlations change over time, so it is important to capture the dynamic relationships.

Why Market-Guided?
- The overall market status affects the effectiveness of stock features.

APPROACH - 2GATE + NEWS + MASTER

- Gate 1 - Market Gate

  Utilize market indices, macroeconomic indicators and USA news to determine a gate for feature re-scaling.
- Gate 2 - Industry Gate

  Use industry returns to adjust stock features within the same industry.
- News Features

  Use FinDKG to identify correlated firms, extract both individual and correlated firm news as features.

DATASETS

Data Source
- Stock Features: CRSP-S&P500
  - Stock Numbers: 8 firms × 9 industries = 72 firms
- Market Index: Yahoo Finance
- Macroeconomic Indicator: FRED
- Firm Correlation: FinDKG
- News Features: RavenPack

Dataset Split
1. Follow the MASTER Paper
   - Training: 2008-01-01~2022-12-31
   - Testing: 2023-01-01~2023-12-31
2. Before COVID-19
   - Training: 2008-01-01~2017-12-31
   - Testing: 2018-01-01~2018-12-31

EXPERIMENT RESULT

1. Training on 2008~2022, Testing on 2023

	No Trick	All Tricks	Trick 1	Trick 2	Trick3
RMSE	0.0196	**0.0184**	0.0186	0.0196	0.0185

2. Training on 2008~2017, Testing on 2018

	No Trick	All Tricks	Trick 1	Trick 2	Trick3
RMSE	0.0180	**0.0168**	0.0169	0.0174	0.0175