

Appendix

Figure 1 to Figure 5 present DENet forecasts on daily data for five futures contracts. The overall trends differ markedly across instruments, which indicates that each contract follows distinct price dynamics. In particular, SM exhibits more pronounced abrupt fluctuations, whereas WR shows a comparatively smooth trajectory. Across all contracts, DENet predictions align closely with the ground-truth series, which suggests that the model remains robust when adapting to heterogeneous futures characteristics.

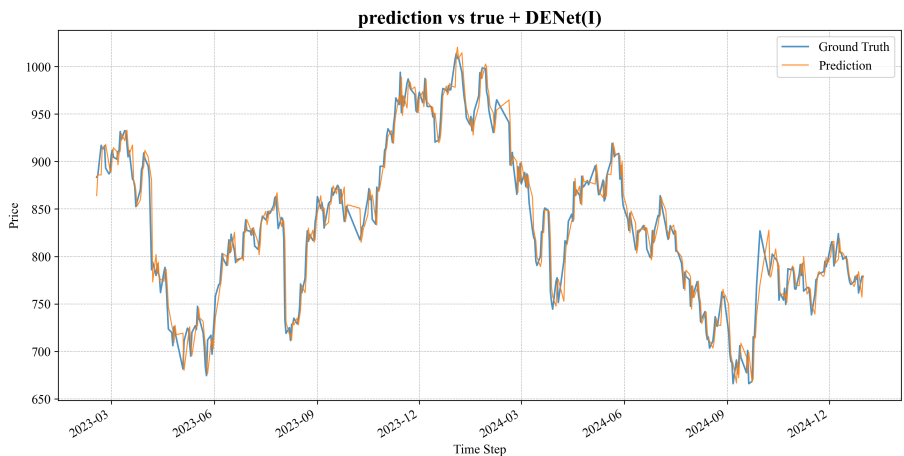


Figure 1. Comparison Plot of Observed and Predicted Values for Daily Iron Ore Futures Data.

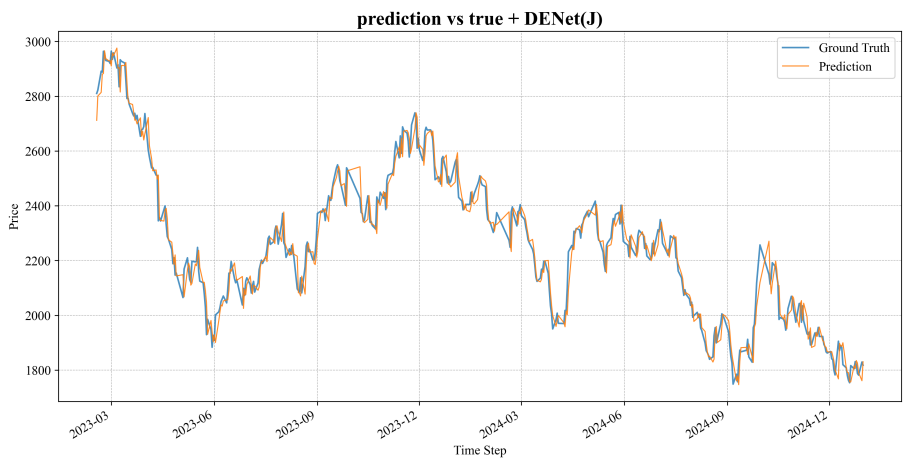


Figure 2. Comparison Plot of Observed and Predicted Values for Daily Coke Futures Data.

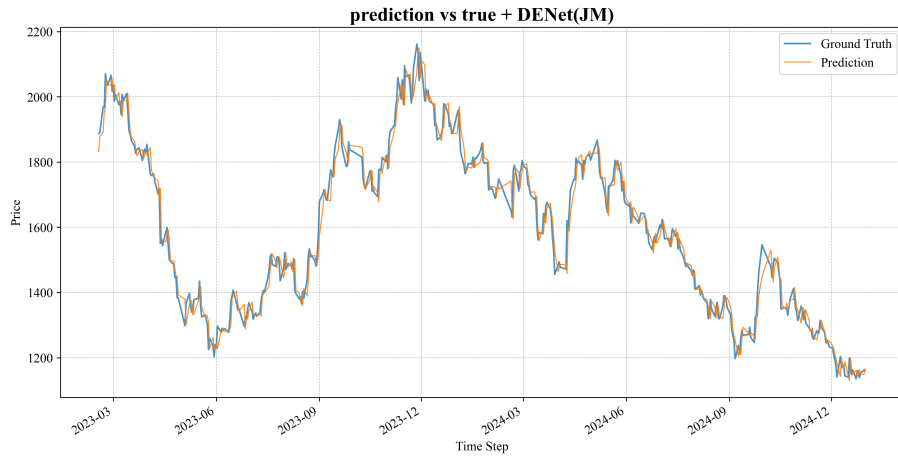


Figure 3. Comparison Plot of Observed and Predicted Values for Daily Coking Coal Futures Data.

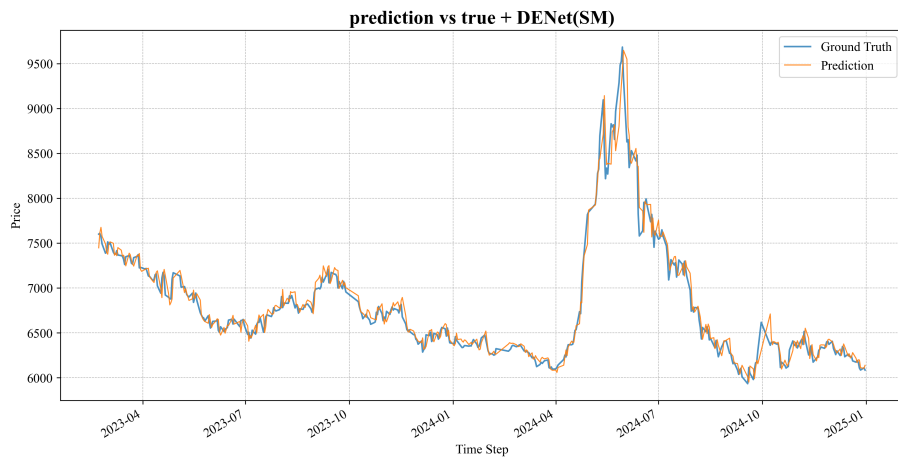


Figure 4. Comparison Plot of Observed and Predicted Values for Daily Silicomanganese Futures Data.

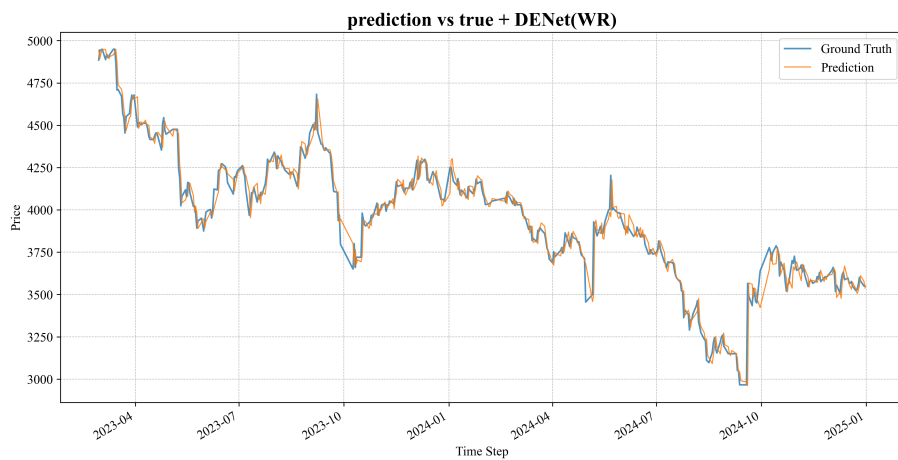


Figure 5. Comparison Plot of Observed and Predicted Values for Daily Wire Rod Futures Data.

Figure 6 to Figure 10 show the one-step-ahead forecasting results of DENet on 5-minute data for five futures contracts. Compared with one-step forecasting on daily data, minute-level one-step forecasts are more numerically accurate. This

improvement is mainly attributed to the larger number of training samples and the shorter temporal span covered by 5-minute series, which makes contract-specific short-horizon dynamics easier to identify and thus easier to forecast.

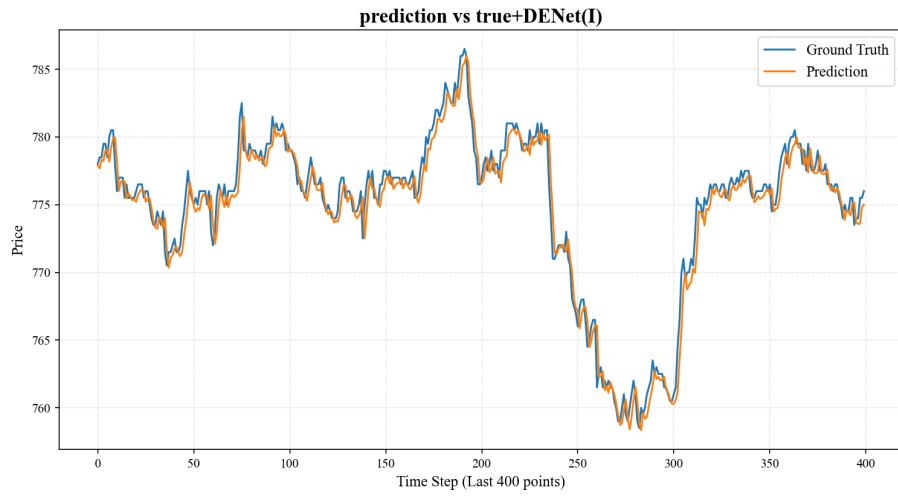


Figure 6. Comparison Plot of Observed and Predicted Values for Minute-Level Iron Ore Futures Data.

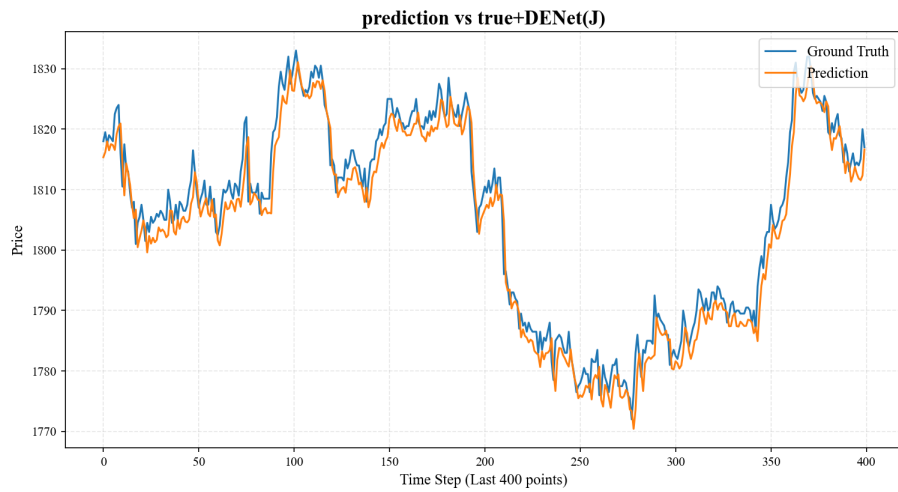


Figure 7. Comparison Plot of Observed and Predicted Values for Minute-Level Coke Futures Data.

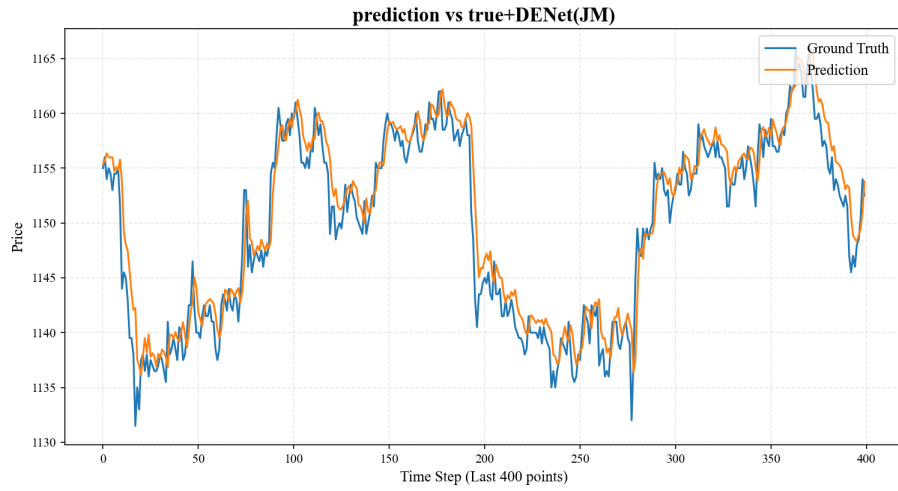


Figure 8. Comparison Plot of Observed and Predicted Values for Minute-Level Coking Coal Futures Data.

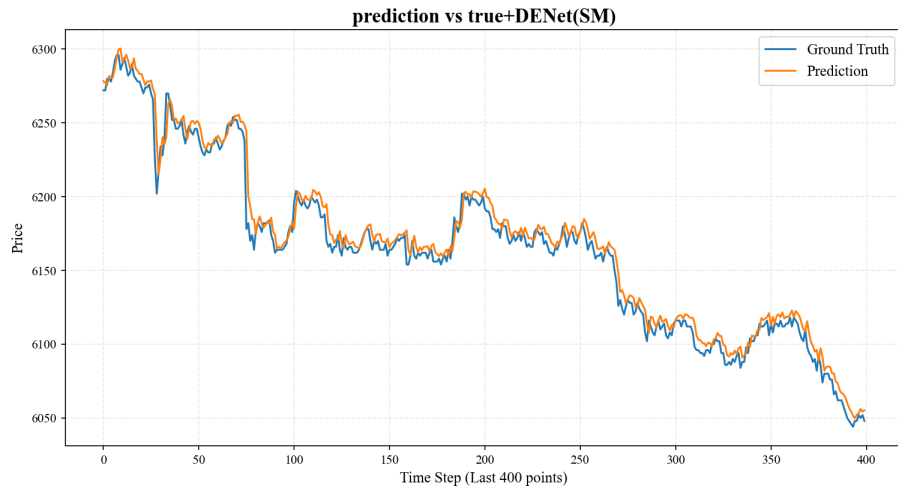


Figure 9. Comparison Plot of Observed and Predicted Values for Minute-Level Silicomanganese Futures Data.

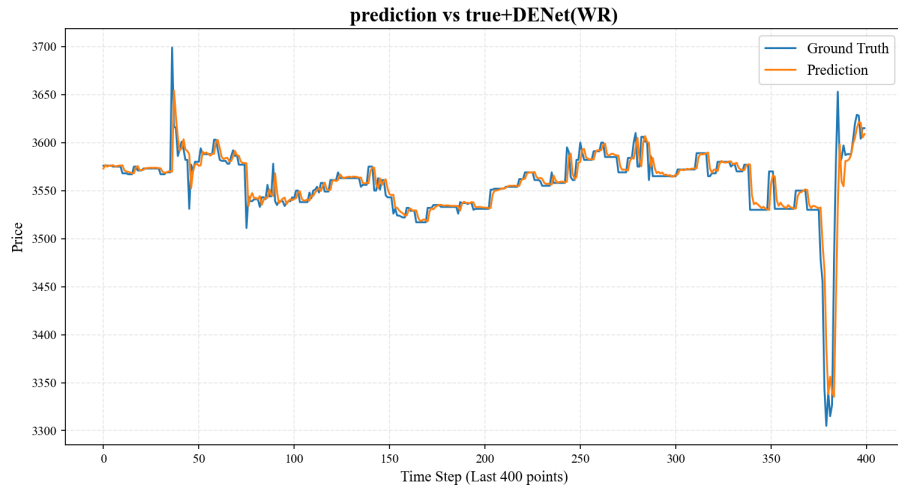


Figure 10. Comparison Plot of Observed and Predicted Values for Minute-Level Wire Rod Futures Data.