

# Intraday Return Predictability in the Crude Oil Market: The Role of EIA Inventory Announcements

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The US Energy Information Administration (EIA) releases the Weekly Petroleum Status Report and provides estimates of the inventory levels of crude oil and petroleum products every Wednesday at 10:30 Eastern Time (ET). The inventory announcements significantly impact the crude oil market and, subsequently, the real economy.

We analyze the impact of EIA inventory announcements on the crude oil market from the perspective of intraday return predictability. We complement previous studies about intraday momentum, which generally focus on the predictability of the first half-hour on the last half-hour returns of the same day. More specifically, we examine whether and to what extent the EIA inventory announcements affect the pattern of intraday return predictability.

We report three key findings: (i) the third half-hour returns (when news is released) on EIA announcement days can significantly and positively predict the returns in the last half-hour, whereas, on non-EIA announcement days, only returns in the first half-hour have significant predictability; (ii) on days with EIA announcements, investors pay more attention to the forthcoming inventory news releases than to the information released overnight; (iii) the importance of the third half-hour returns for the EIA group is more apparent during periods of high volatility and periods when active portfolio management is required.

Our contributions are three-fold. First, we document the importance of EIA announcements for an intraday momentum strategy, an issue that has received little attention to date. Second, we show that the predicting source of the first half-hour returns on non-EIA days comes from the overnight component, the return between the price at market open and the previous day's price at market close. This finding adds to the understanding of the role of overnight returns in intraday momentum. Third, we explore the theoretical mechanisms in the different predictive sources in third half-hour returns by connecting them to informed trading and liquidity provision. Overall, our analysis contributes to understanding the theoretical framework explaining different patterns in intraday momentum and provides practical implications for the market participants.

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