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Crude Inventory Accounting and Speculation in the Physical Oil Market

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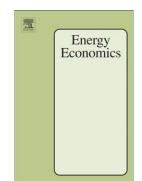
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## **ACCEPTED MANUSCRIPT**

# Crude Inventory Accounting and Speculation in the Physical Oil Market

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Abstract: This paper uses inventory data from financial accounts to explore whether companies involved in the physical oil market were speculating in the run-up to 2008. Using quarterly inventory data over the period 1990Q4 to 2012Q1 and a sample of 15 of the largest listed oil companies in the world, we derive an Index of Scaled Physical Inventories (ISPI). We find declining ISPI up to the early 2000s is consistent with firms minimizing inventory for efficiency sake; then ISPI starts to increase, suggesting physical inventories could have contributed to the run-up in oil prices between 2003 and 2008. Highlighting heterogeneity in inventory behaviors amongst the large oil companies, the structural break test on the ratio of inventory to sales and the days to sales for individual companies shows that five companies had positive structural breaks during the speculation period, while the other companies had no or negative structural breaks. Contrary to declining inventory expectations due to a tightening oil market, the positive structural breaks suggest speculative behavior. We also examine the relationship between changes in profitability and changes in oil inventory over the pre-speculation and speculation period. Though some coefficients for inventory do switch from negative to positive over the two periods as hypothesized, they are only significant in a few cases. However, aggregate measures of inventory do switch and are significant, suggesting that, on average, inventory holdings negatively affected profitability in the prespeculation period and positively affected profitability in the speculation period.

**JEL Classification:** D84; G12; G13; G18; M41; Q31; Q41

**KEYWORDS:** Speculation; Oil price; Inventories; Accounting information;

Financialization; Positive-feedback trading

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