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# Interactions of Financial Markets and Oil Prices

3rd Joint IEA-IEF-OPEC Technical Meeting on the interactions between physical and financial energy markets

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## Conclusions

**Not all financial participants are the same**
CTAs, Algos and Risk Premia have different drivers

**Massive** size and highly **active** in aggregate
They can move 400 million financial barrels in a quarter

Greater volume but **less market depth**

**Amplify short-term volatility** of oil prices and extremes
Three 40% quarterly declines in 4 years

**Maximizing return** relative to volatility is their only agenda

# Goals

Quantify the size of CTAs, HFTs and Risk Premia

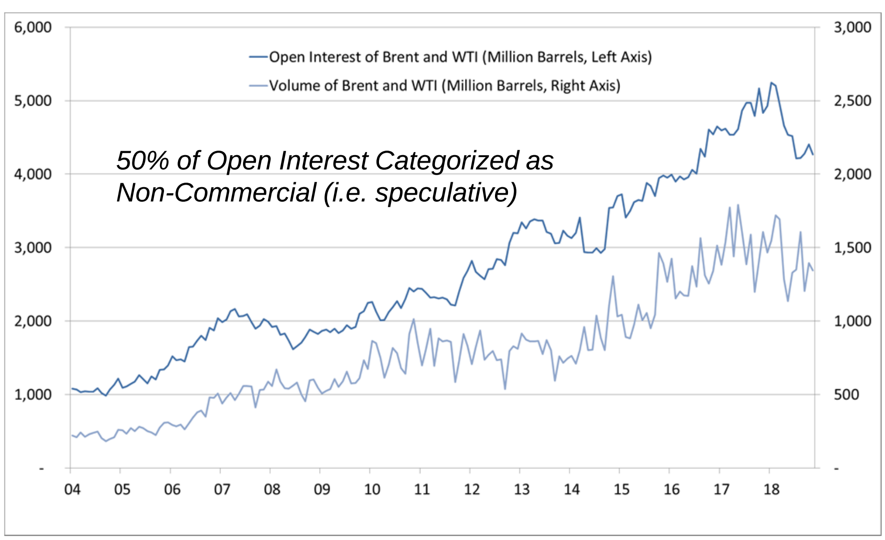
Summarize their behavior and impact

Draw implications for the physical oil community



# Financial Oil Markets Are Massive

## Open Interest and Volumes Doubled in Last Decade




Source: Bloomberg

## Systematic Participants Have Outgrown Fundamental Traders

Algos/HFTs: Top Contributors to Daily Exchange Volume

CTAs: $200-300 billion invested across energy

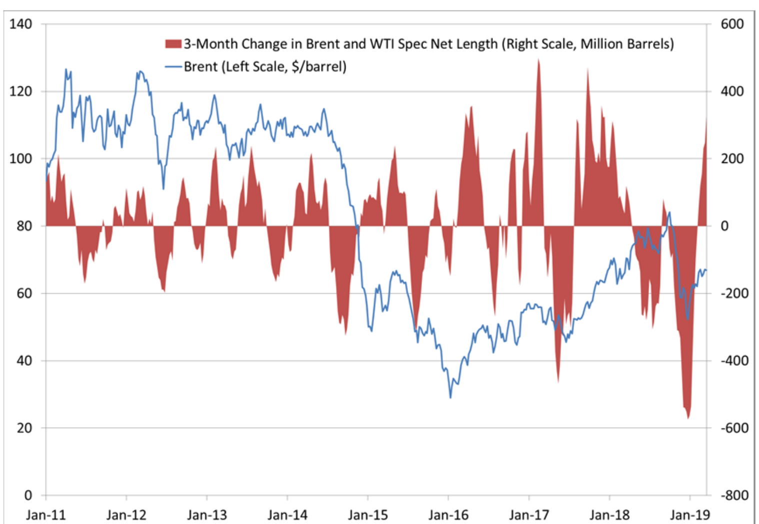
Risk Premium Strategies: $250-300 billion in commodities

Institutional Investors: $150 billion in commodities

Commodity ETFs: $200 billion across commodities



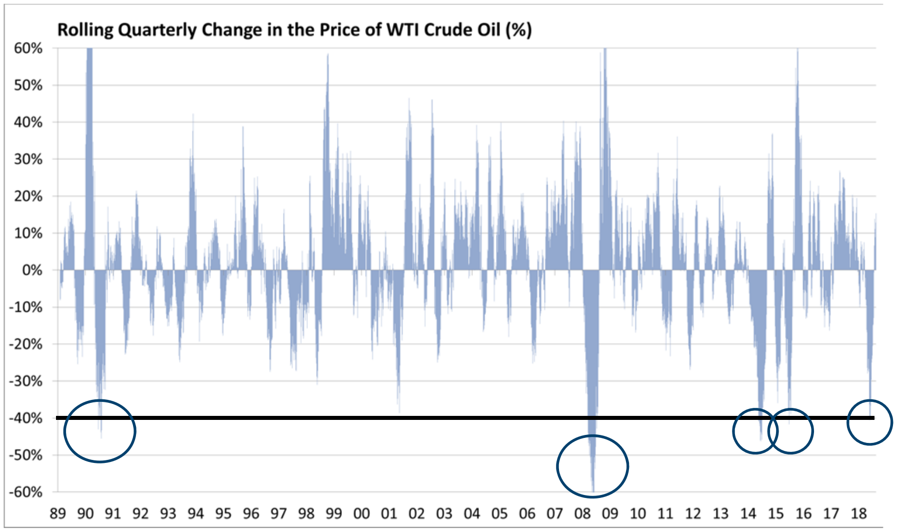
## In Aggregate Specs Can Shift over 400 Million Financial Barrels in a Quarter




Source: Bloomberg, CFTC

# Greater Short-Term Downside Volatility

Three 40% Corrections in 4 Years




Source: Bloomberg

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# Algos and High Frequency Traders (HFTs)

Prefer large established markets
  Oil is one of the world's most active financial markets

Dominate exchange-traded volume
  **Top 10** oil futures market participants

Carry no specific agenda and **indifferent to price**

Liquidity providers turn into liquidity consumers
  More transactions but **less market depth**

Consistently **risk neutral**

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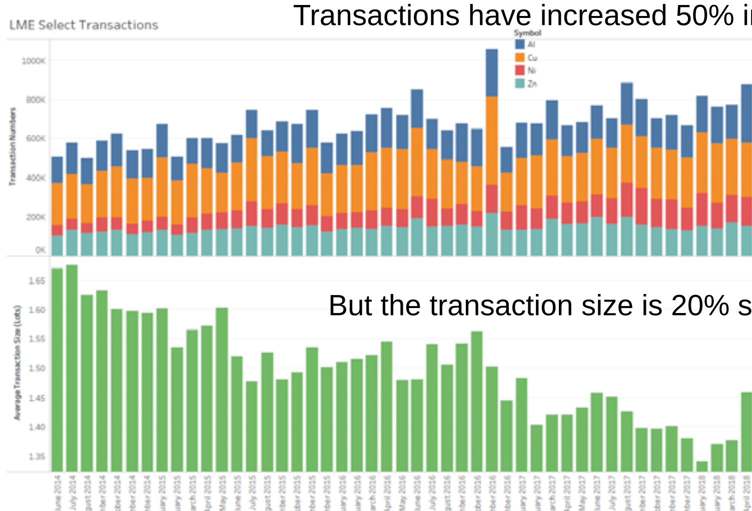
# HFTs: Good or Bad for Liquidity
## It depends on your perspective

Transactions have increased 50% in 4 years




But the transaction size is 20% smaller

Source: Marex Spectron

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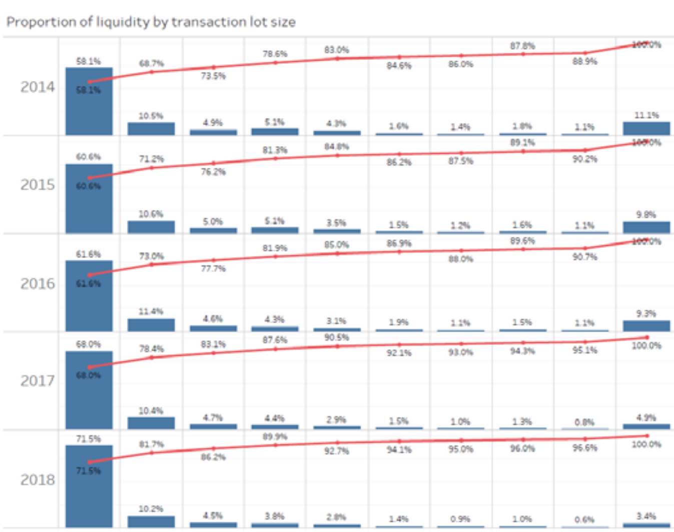
# HFTs: More Trades and Less Liquidity
## Social size is a single contract




Source: Marex Spectron

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## Commodity Trading Advisors (CTAs)

Trend following and driven by price momentum

Trade across liquid derivatives markets

Strict risk controls

Increased sophistication and highly adaptive

Holdings average between 2 and 4 weeks

Shorter timeframes increasingly favored

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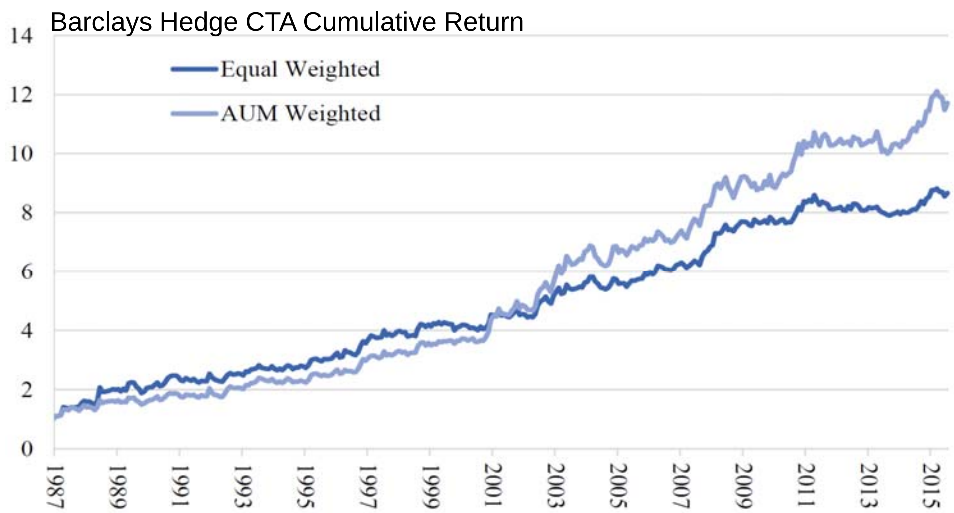
## CTA Returns Have Been Strong and Uncorrelated




Source: Barclays

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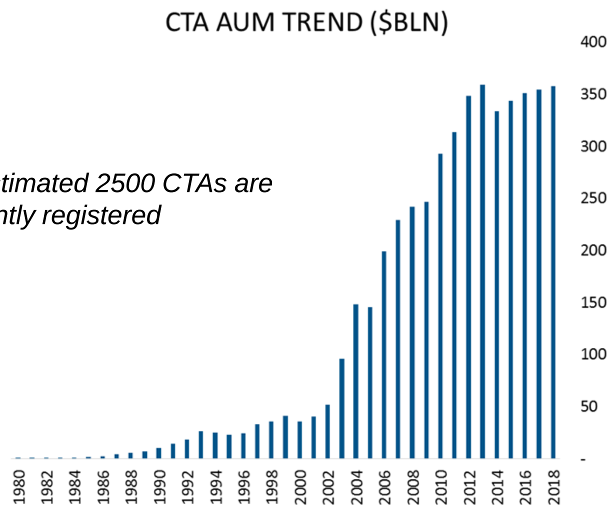
## CTAs: Number and size has consistently increased in the last decade




*An estimated 2500 CTAs are currently registered*

Source: Macquarie Bank



## Alternative Risk Premia

Growing pool of assets

Uncorrelated to traditional assets

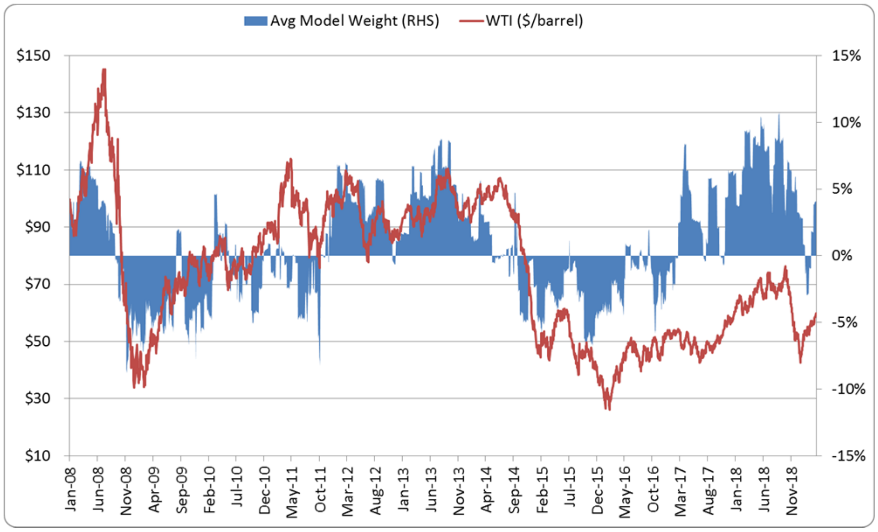
Balanced risk approach across asset classes looking to “optimize” Sharp Rations

“Factor” based strategies:

- Carry
- Volatility
- Momentum

Reduce risk when volatility increases

# Alternative Risk Premia Strategies Amplify Underlying Moves




Source: Wellington Management

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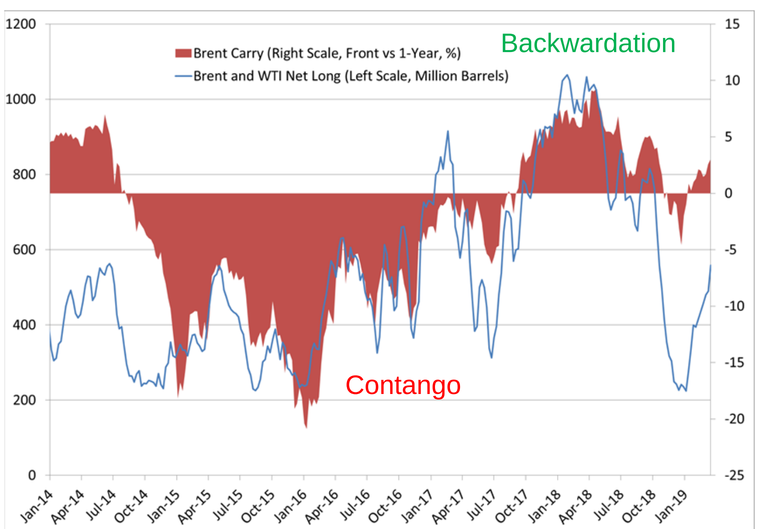
# The Carry Influences Money Flows

## Backwardation attracts speculative length




Source: Bloomberg

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# Positioning Increasingly Calendar Spread Based vs Outright Long or Short


Source: Marex Spectron



# Implications

Technology has introduced new market conditions

Systematic oil market community can destabilize short-term oil prices

Greater short-term volatility discourages capital investment by elevating the required rate of return

“Price Stability” is an important message that needs to be consistently communicated

The carry is a powerful quantitative signal that OPEC can manage through inventories

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