

Commodity Exchange Traded Funds

June 2011

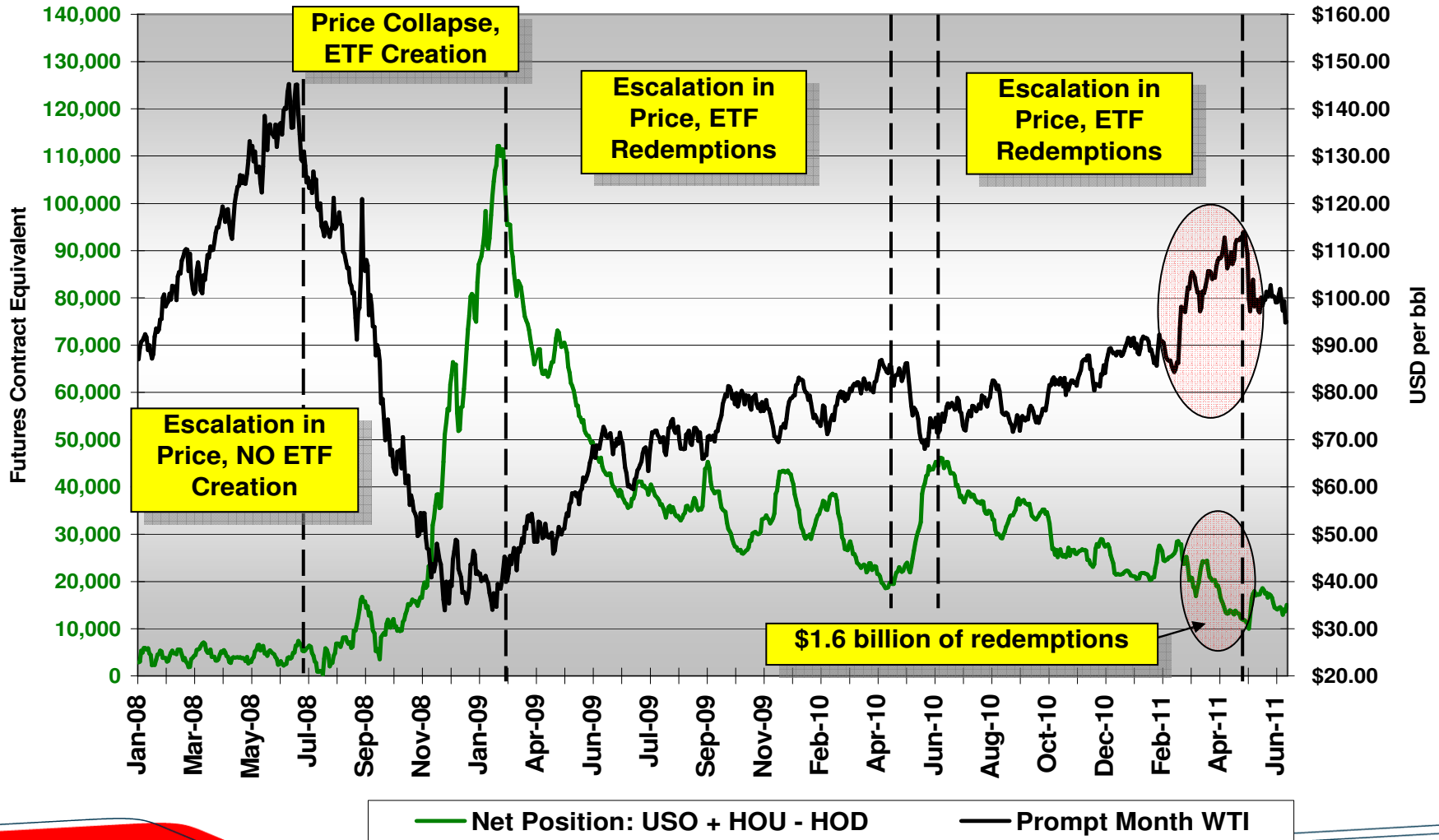
Tim Simard

NBC Commodities

- 14-person Calgary-based team running both a client-driven and strategic trading operation
 - Collective team experience in excess of 250 years in the field of energy trading and risk management
 - Primarily energy: crude oil, refined products and both physical and financial natural gas
 - **strategic trading activities largely to support client-driven business**
- Broad base of corporate flow hedging activity
 - 75% oil and gas producers, + utilities and energy consumers
 - Strong lending franchise supports energy hedging business
 - **140+ transactional clients over the past 24 months**
 - Many larger, highly-competitive counterparties
- **Daily commentary circulated to over 1,400 people**
- **Trading desks provide the hedge for all the Horizons BetaPro commodity ETFs:**
 - Crude, natural gas, gold, silver, copper
 - **Largest trader of financial energy derivatives among Canadian banks**
- New activities:
 - **WCS (heavy crude) hedging, NGL hedging**, natural gas storage, metals trading

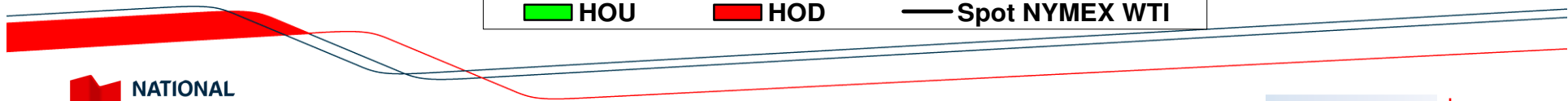
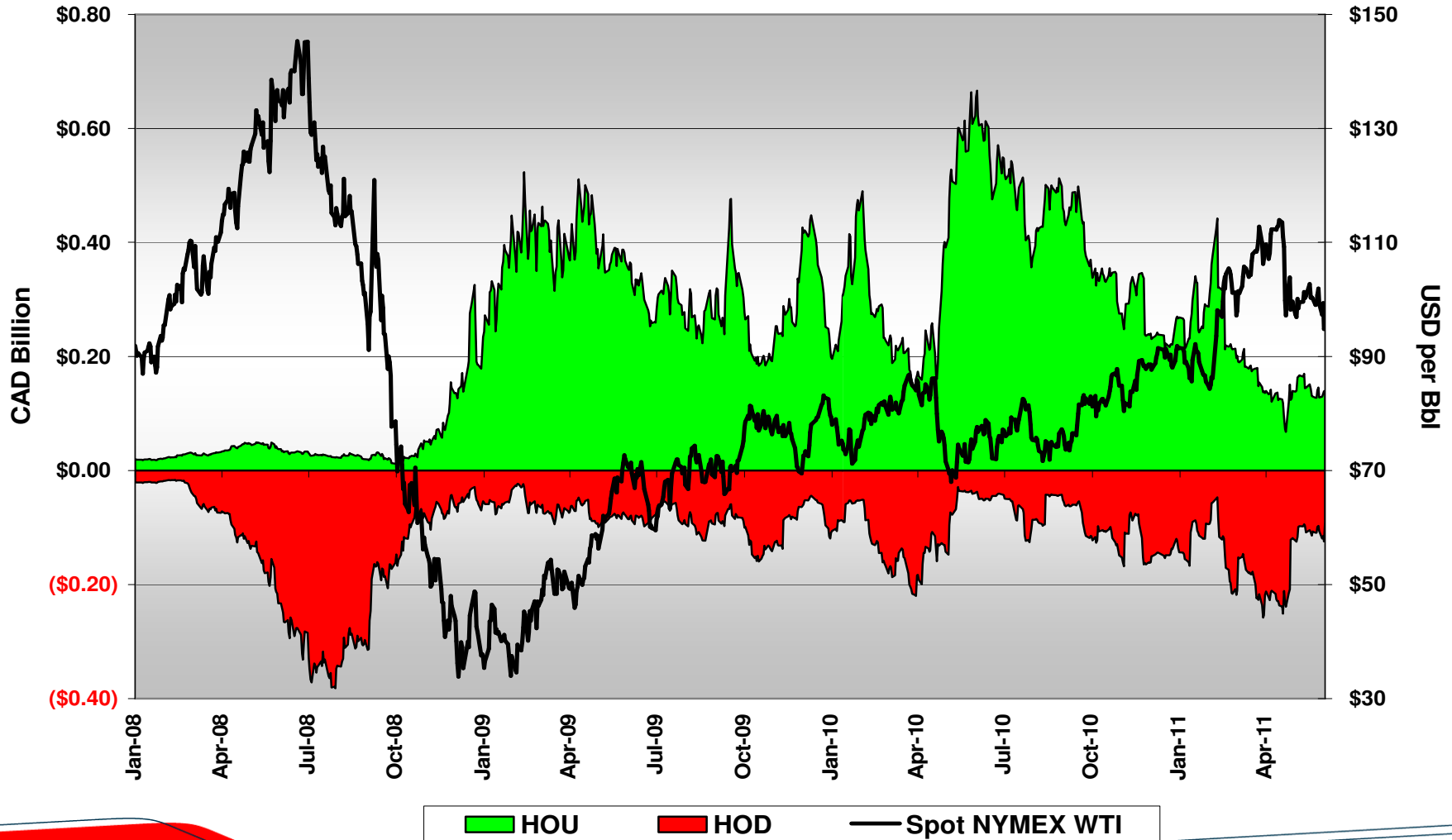
ETFs are Causing Market Volatility – Huh???

Total Crude Oil ETF Contracts versus Prompt WTI



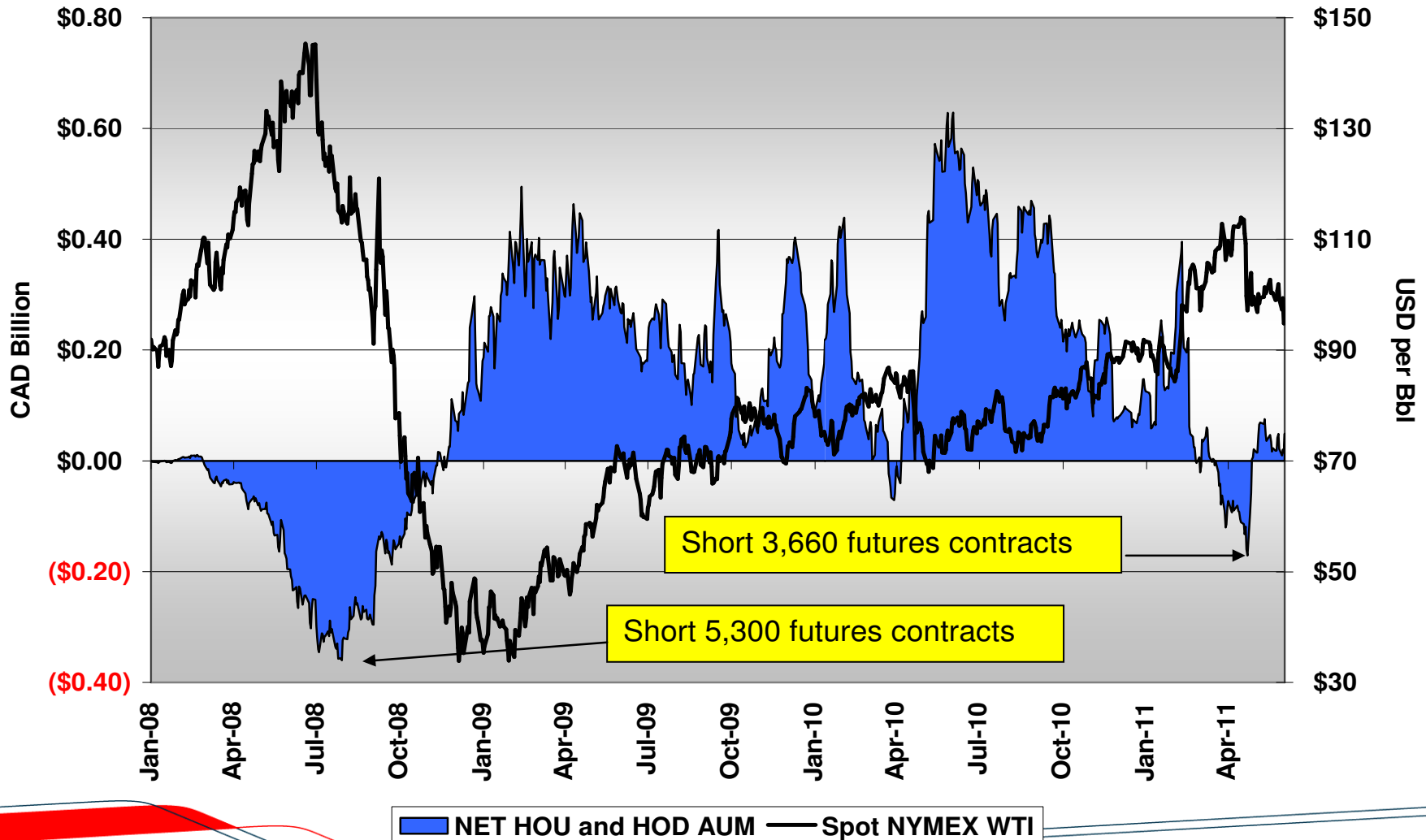
ETFs are Causing Oil Market Volatility – Huh???

Total AUM for HOU and HOD versus WTI



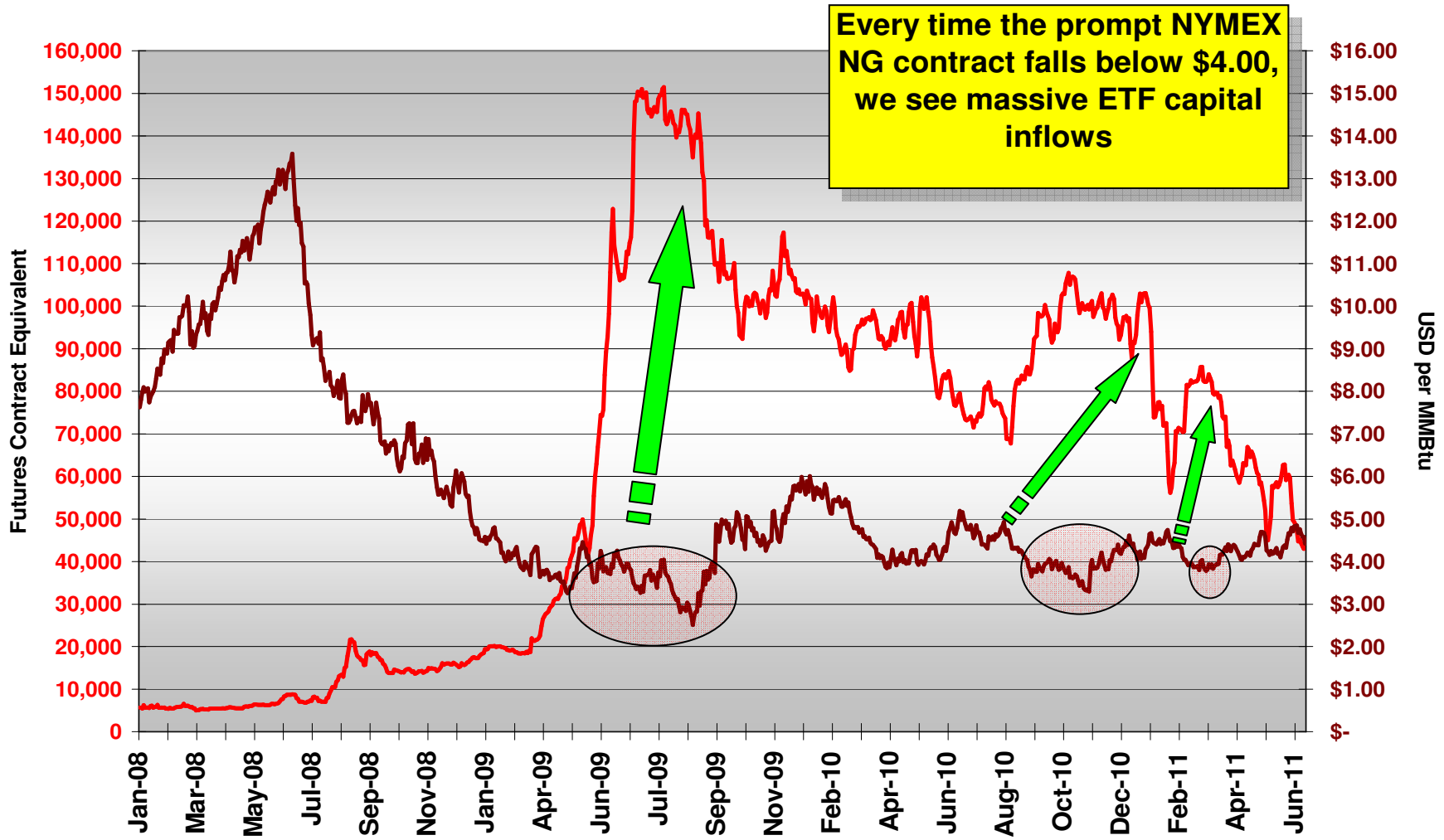
ETFs are Causing Oil Market Volatility – Huh???

Net HOU and HOD AUM vs WTI



ETFs are Causing Natural Gas Market Volatility – Huh???

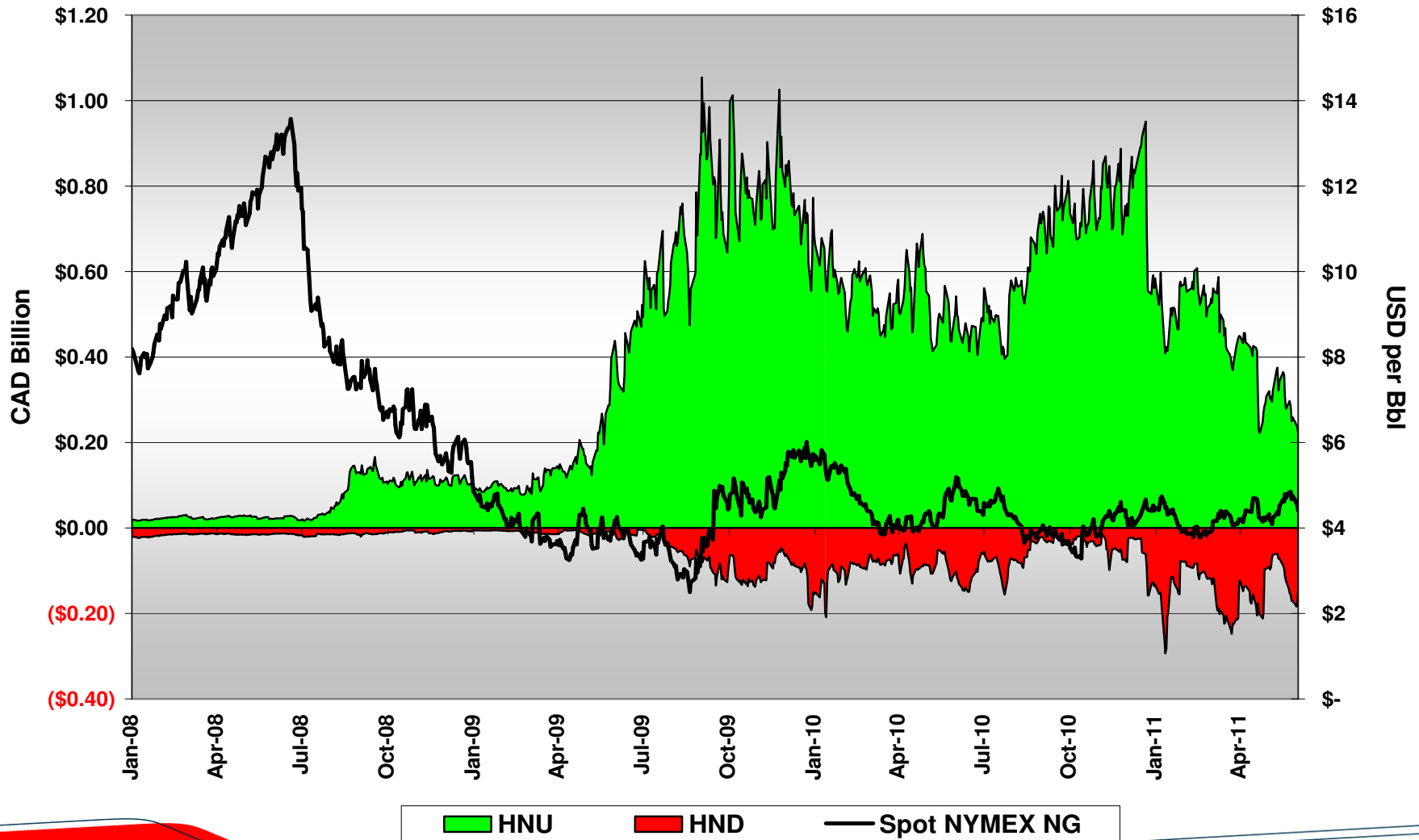
Total Natural Gas ETF Contracts versus Prompt NYMEX NG



— Net Position: UNG + HNU - HND — Prompt Month NYMEX NG

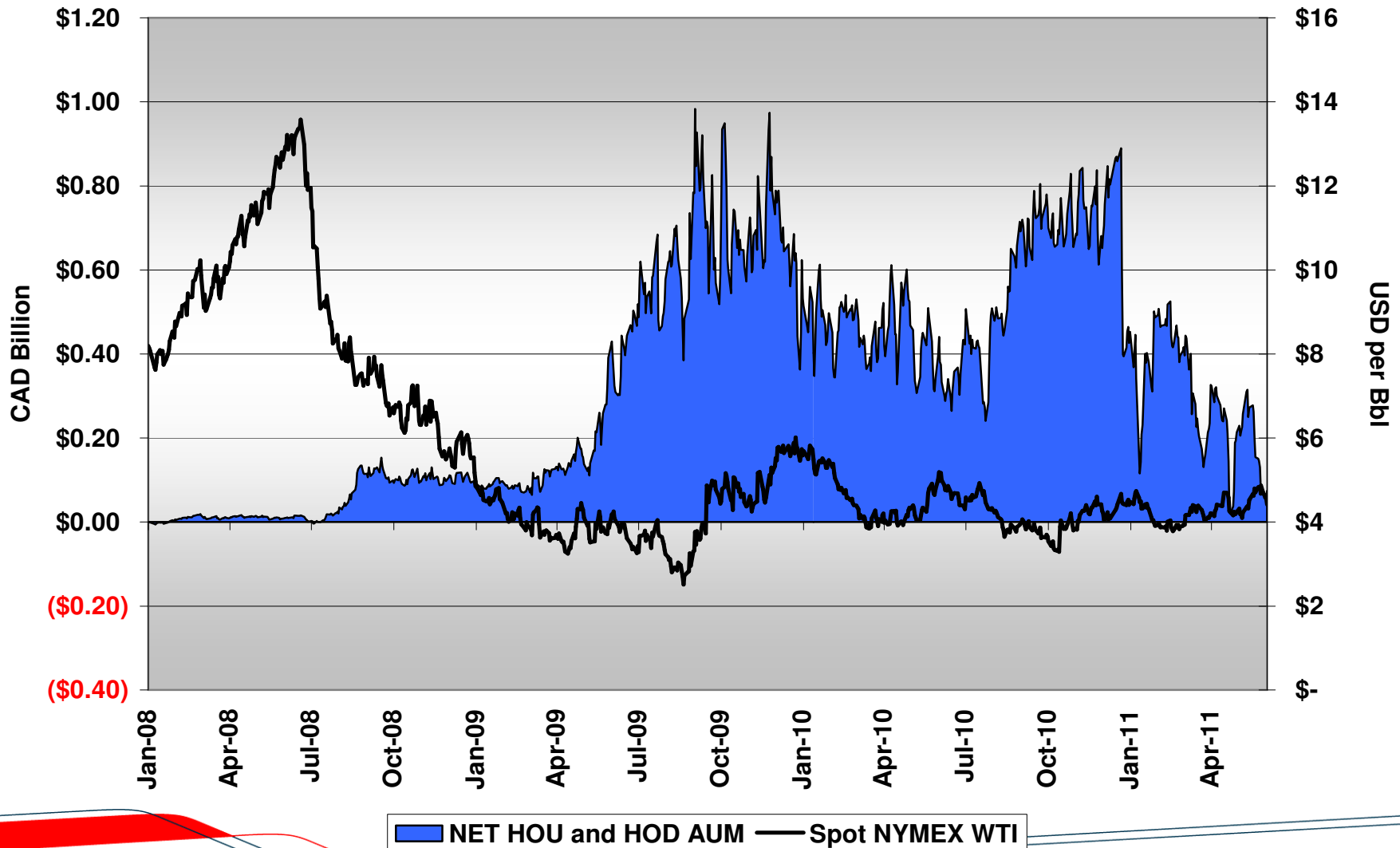
ETFs are Causing Natural Gas Market Volatility – Huh???

Total AUM for HNU and HND versus NYMEX NG



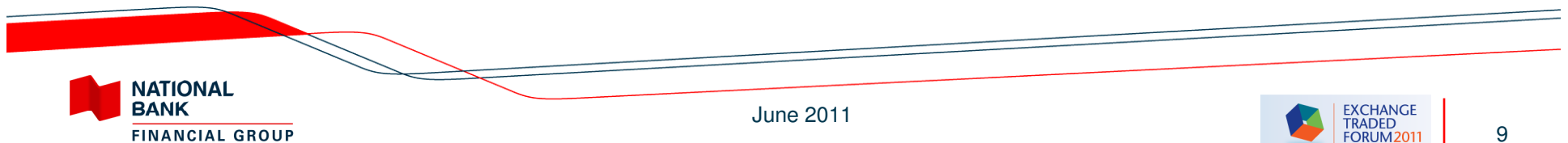
ETFs are Causing Natural Gas Market Volatility – Huh???

Net HNU and HND AUM vs NYMEX NG



The Contango/Backwardation Issue

- **Contango** – forward prices trading at a premium to spot prices
- **Backwardation** – forward prices trading at a discount to spot prices
- **“theoretically”**, forward prices represent the consensus market view of future spot market prices
 - At times there can be a structural imbalance between buyers and sellers in the forward curve
- Unlike many other forward curves (equities, FX, interest rates), frequently arbitrages are not possible to construct a predictable forward curve (especially in a backwardated scenario)
 - E.g. backwardation should never exist
- Long commodity investors view contango as a “cost”, backwardation as a “benefit”



The Contango Arbitrage

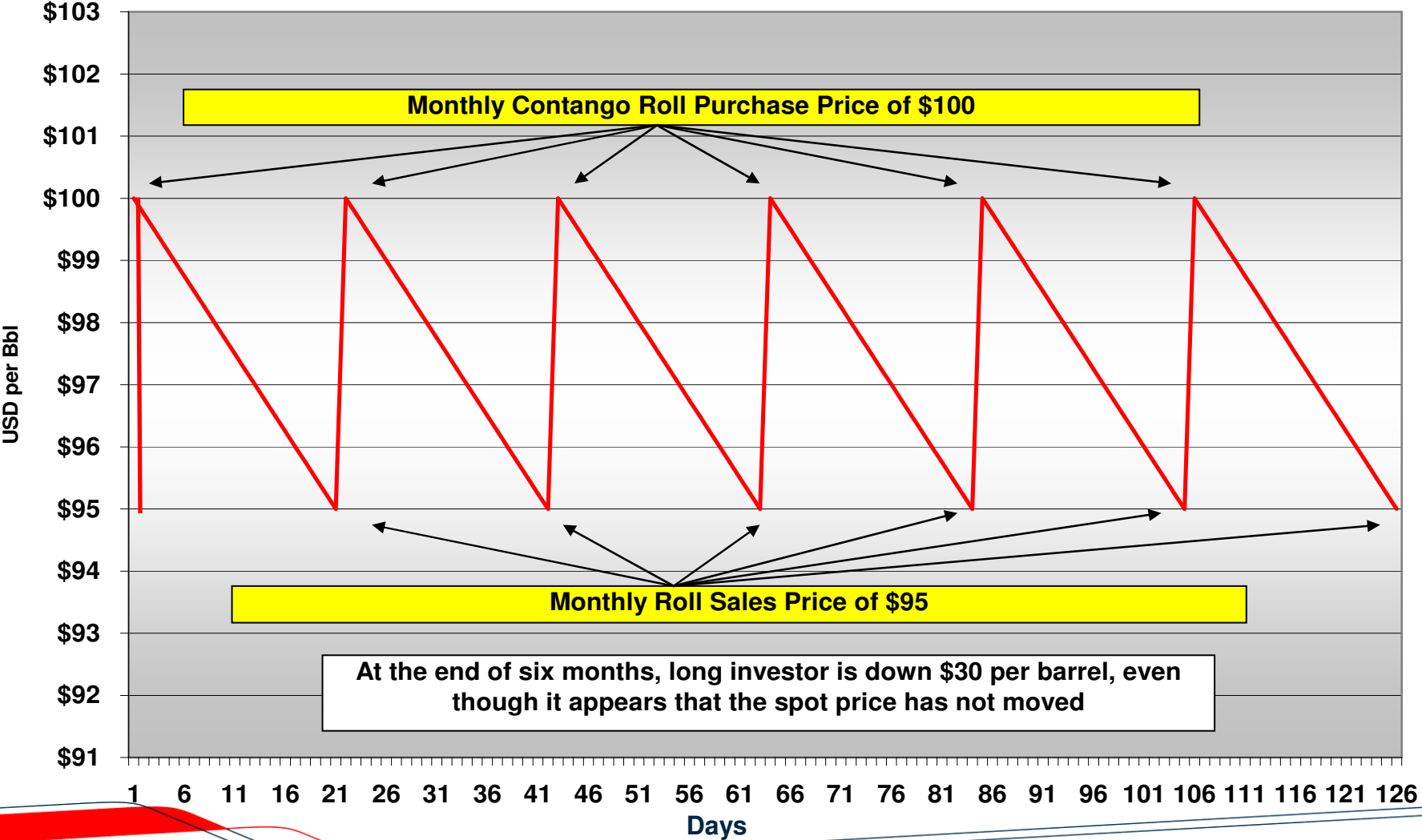
- Assume July crude is trading at \$90 and August crude is trading at \$100
- Trader borrows \$90 and buys July barrels at \$90, injects those barrels into storage at Cushing, Ok., and simultaneously locks in the sales price one month later at \$100
- Borrowing cost at 3% for one month approximately \$0.20 per bbl
- Storage costs approximately \$0.40 per bbl per month
- Net arbitrage profit: $\$100 - \$90 - \$0.60 = \9.40
- Traders would continue to buy July and sell August until the arbitrage disappears – the July-August market in \$0.60 contango
- What can cause the contango to widen out more than the cost of storage + interest costs?
 - No more storage availability at the delivery point of the futures contract
 - Happened in crude oil in early 2009
 - Contango moved so wide that traders were incentivized to book tankers and store crude from month-to-month offshore – “floating storage”

The Backwardation Arbitrage

- Assume July crude is trading at \$100 and August crude is trading at \$90
- Trader borrows a barrel of crude for the month of July
- Trader sells the barrel for delivery in July at \$100, and simultaneously enters into a forward purchase in August so he can return the barrel to the lender
- Trader invests the \$100 proceeds and receives interest for the month
- Assume the cost to borrow the barrel is \$1 per bbl
- Net arbitrage profit: $\$100 - \$90 - \$1.00 + \$0.20 = \$9.20$
- In this scenario, traders will continue to sell July and buy August until the premium to the July contract falls to \$0.80
- Major problem: when the market is tight, there is no borrowing market for crude oil
 - There is utility associated with holding the barrel of crude so that it can be consumed
 - E.g. would a Northeast homeowner lend his heating oil when the temperature is -40 degrees?
- As a result, there is no theoretical maximum to the potential backwardation in the market
 - Spot month crude could be trading at \$200 with the 2nd month trading at \$100

The Contango/Backwardation Issue

Contango "Cost"



Investors Cannot Completely Avoid the Contango Effect

- The physical purchase alternative:
 - Buy crude today and store it until you want to sell it
 - Cost of term storage \$0.40 - \$0.50 per bbl
 - If you wanted to buy and hold crude for 5 years, buy crude at \$100, pay storage costs of \$24 - \$30 per bbl
 - Price in 5 years' time would have to be greater than \$130 to make money!
 - 5-year premium in the oil forward market has never been as high as \$30 per bbl
- The oil producer alternative:
 - Today's share price for an oil producer should be based on price he will receive in the future for his oil
 - E.g. if spot crude is at \$100, but the rest of the forward curve out for five years is trading at \$110, is the producer's NAV based on \$100 or \$110?
 - In this scenario, if one purchases the producer's shares based on the \$110 forward price and the price ends up actualizing at today's spot price of \$100, you should lose money on the equity investment

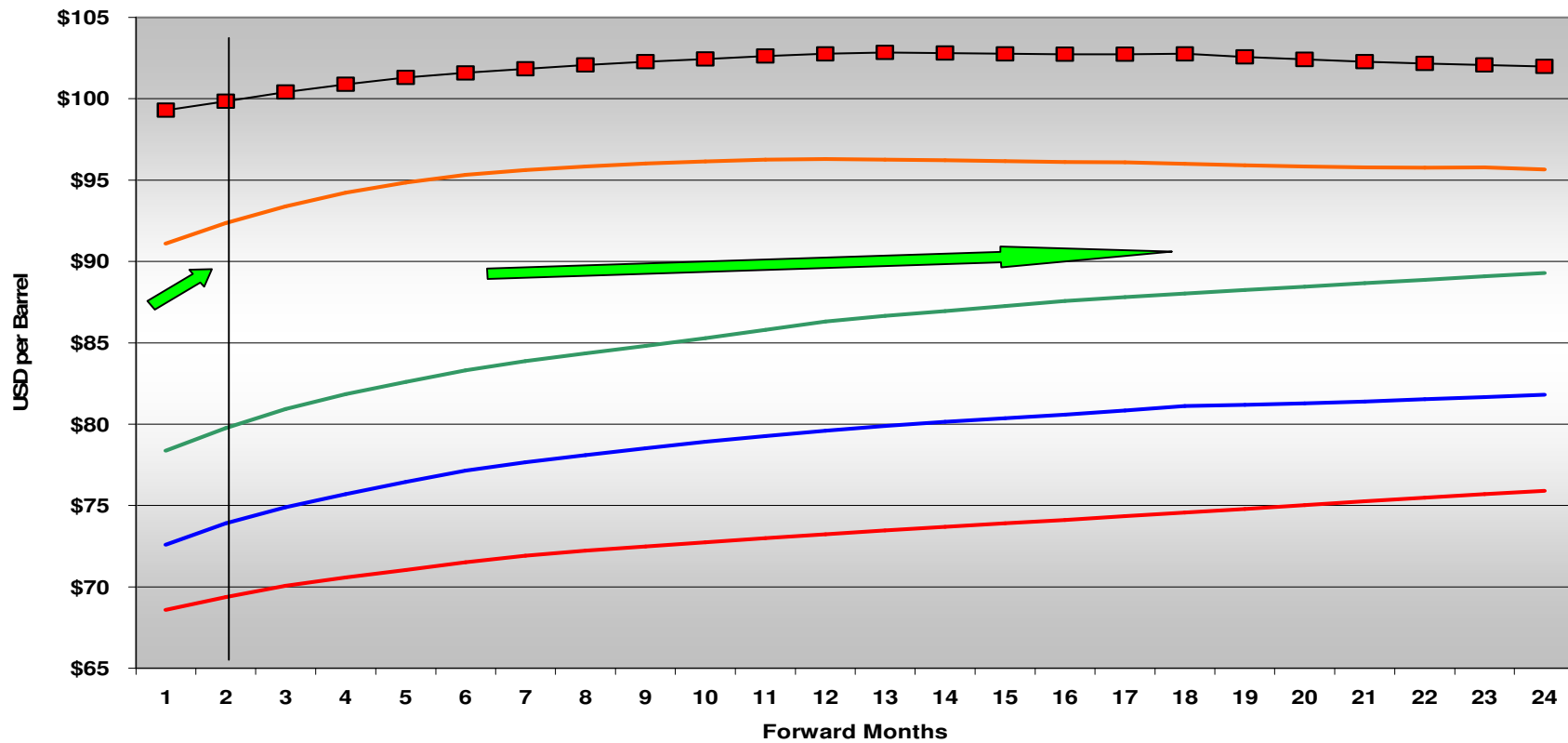
Mitigating the Roll Effect – Roll Where the Curve is Flatter

- **Horizons Beta Pro in June 2009 launched two single bull energy ETFs:**
 - HBP Winter-Term NYMEX Crude Oil ETF (HUC)
 - HBP Winter-Term NYMEX Natural Gas ETF (HUN)
- **Designed to appeal to longer-term buy-and-hold investors**
- **Crude ETF (HUC) tracks the first nearby December contract, rolling once a year in June to the following December**
- **Natural gas ETF (HUN) tracks the first nearby January contract, rolling once a year in November to the second nearby January contract**
- **Selection of index meant to maximize liquidity while minimizing the contango/backwardation phenomenon**
 - December crude contracts the most liquid along the forward curve
 - Rolling from the 6th month to the 18th month typically in a flatter part of the curve
- **Largely insulated from movements in the CAD/USD exchange rate**

Rolling in a Flatter Part of the Curve

- Current first-versus second month spread \$0.65
- HUC is rolling with a 12-month spread of \$1.20, so just \$0.10 per bbl per month

WTI Forward Curve Structure

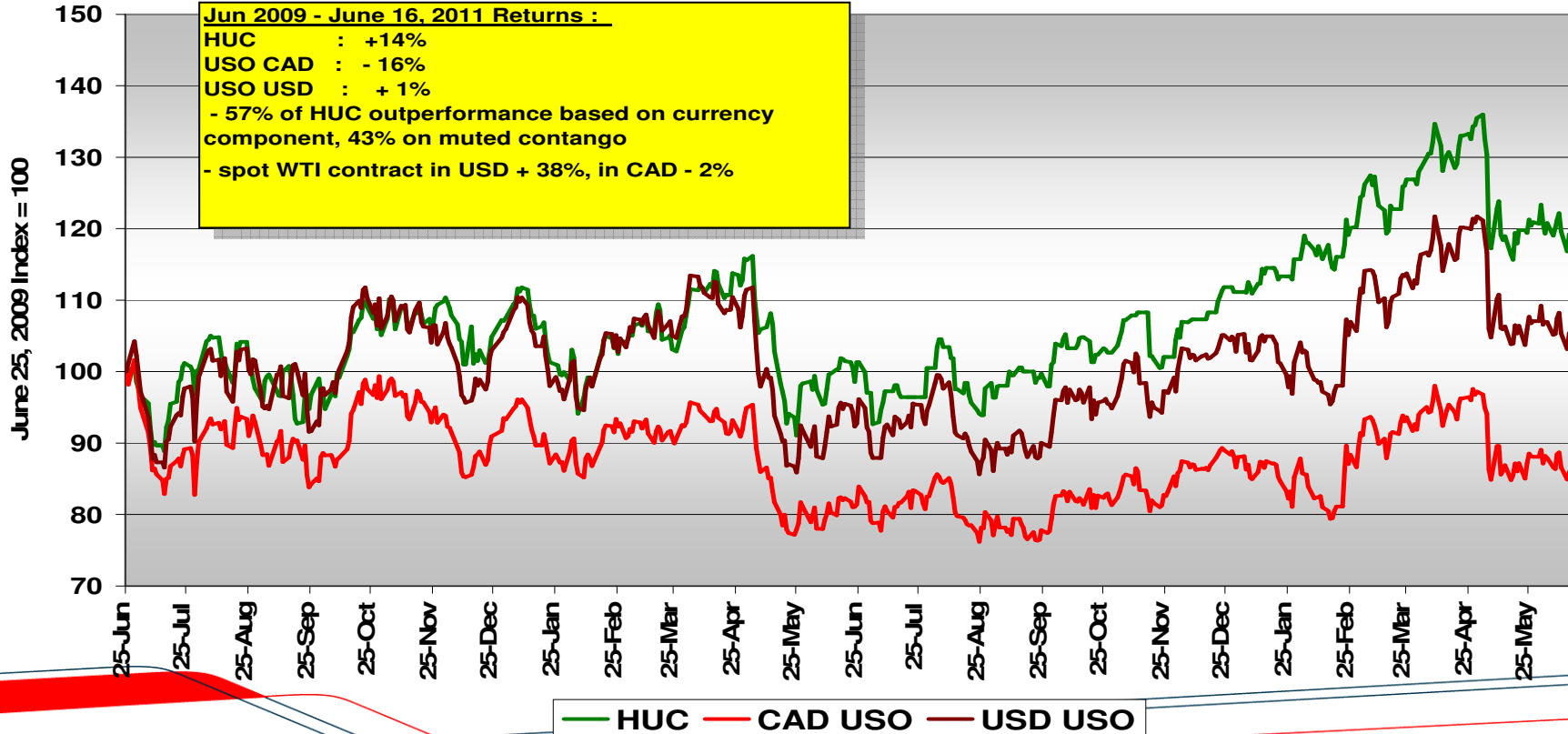


— Jun 1, 09 — Jun 1, 10 — Dec 1, 09 — Jan 11, 11 — Jun 10, 11

MITIGATING CONTANGO & CAD/USD HAS LED TO HUC OUTPERFORMANCE

- Since the launch of HUC, performance of HUC is +14% and performance of CAD-denominated USO is -16%, an outperformance of 30%
- Performance of USD-denominated USO is +1%
- Therefore 57% of the total outperformance is attributable to the currency effect, 43% is attributable to the contango mitigation

HUC versus CAD USO
Jun 2009 - June 16, 2011

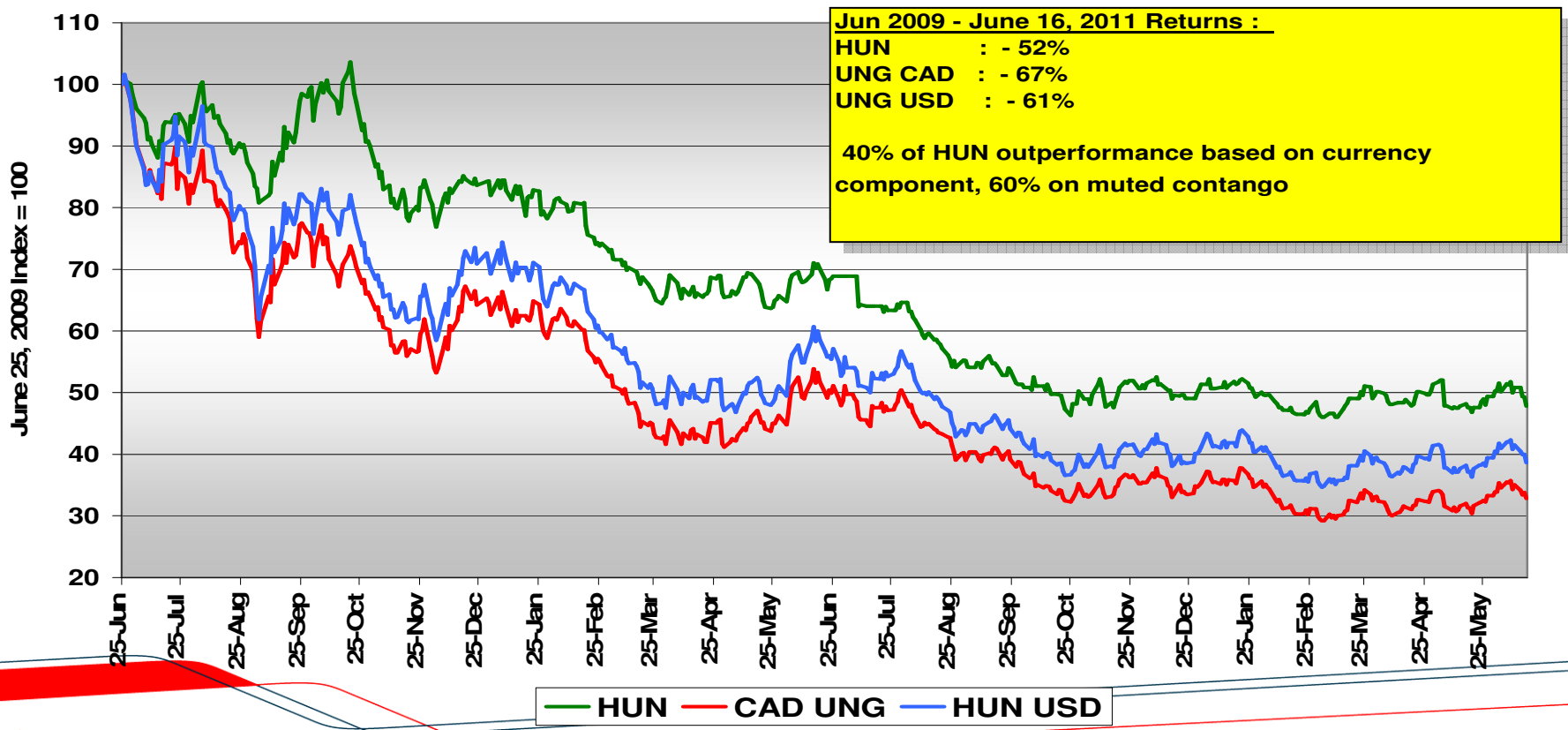


Jun 2009 - June 16, 2011 Returns :
 HUC : +14%
 USO CAD : -16%
 USO USD : +1%
 - 57% of HUC outperformance based on currency component, 43% on muted contango
 - spot WTI contract in USD + 38%, in CAD - 2%

MITIGATING CONTANGO & CAD/USD HAS LED TO HUN OUTPERFORMANCE

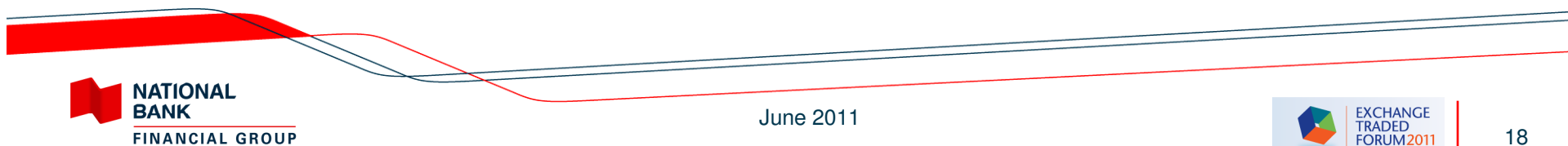
- Since the launch of HUN, performance of HUN is -48.0%, and performance of CAD-denominated UNG is -66.1%, an outperformance of 18.1%
- Performance of USD-denominated UNG is -58.6%
- Therefore 45% of the total outperformance is attributable to the currency effect, 55% is attributable to the contango mitigation

HUN vs. CAD UNG vs. USD UNG
June 2009 - June 16, 2011



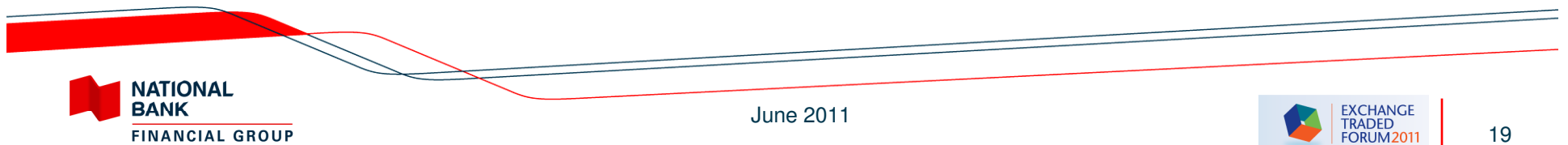
LIQUIDITY: ETF VOLUME/UNITS OUTSTANDING IS NOT A TRUE MEASURE OF ETF LIQUIDITY!

- HUC and HUN were designed specifically to minimize the effect of contango while maximizing liquidity
- Bid/offer quoted by HUC/HUN market-makers is driven by the bid/offer on the underlying futures contract that the market-makers will use in automated fashion to hedge their ETF transaction with you
- NYMEX WTI December contracts underlying HUC represent the greatest liquidity on the strip (outside of nearby contract months)
 - \$10 million tranche involves approximately 100 NYMEX futures contracts
 - Price impact of executing 100 Dec contracts during trading day typically less than \$0.15 per bbl, or about 0.15%
- Similar driver on the NYMEX NG January contracts underlying HUN



Concluding Comments

- Energy ETF investors have served to reduce price volatility rather than exacerbate price volatility
- Contango “cost” effect is unavoidable in the energy markets, although some ETFs are structured better than others in terms of managing this effect
 - Contango/backwardation not an issue for short-term hold positions
 - Important issue for longer-term buy-and-hold strategies



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Tim Simard



**NATIONAL
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EXCHANGE
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