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## Argus US Refined Products Forward Curves

### Overview of liquid and illiquid curve validation

Argus US Refined Products Forward Curves are a powerful, independent market valuation tool used to support investment and trading decisions. Argus' forward curve assessments reflect real commodity market activity, free from distortion and representative of fair market values.

The Argus curves data allows for better management of risk exposure to refined product price volatility. In addition, this service provides independent data for use in calculating value-at-risk and mark-to-market accounting.

#### Argus' forward curves are derived from our deep-well of data including:

- The rich array of physical transactions that are reported to Argus everyday
- Argus' proprietary cash market indices and assessments
- Swaps market data reported by market participants
- Previous trading days' swap curve value
- Futures settlement prices

Argus US Refined Products Forward Curves are produced on a daily basis, with no missing data or gaps. Argus employs a variety of mathematical and statistical analyses to assess each curve's fair market value. The specific analysis and computation varies depending on the market data that is available on a given trading day.

While market data may vary, Argus employs proprietary modeling designed to access a curves value. In an attempt to demonstrate Argus' methodology in practice, the adjacent section provides a closer look at how Argus produces curves in a liquid versus illiquid market.

### Liquid Curve Example

#### Gulf Coast Ultra Low Sulfur Diesel (ULSD)

A liquid curve includes financial swaps trading on Gulf Coast ULSD for 12-18 months, thereby, typically providing market data for much of this price curve.

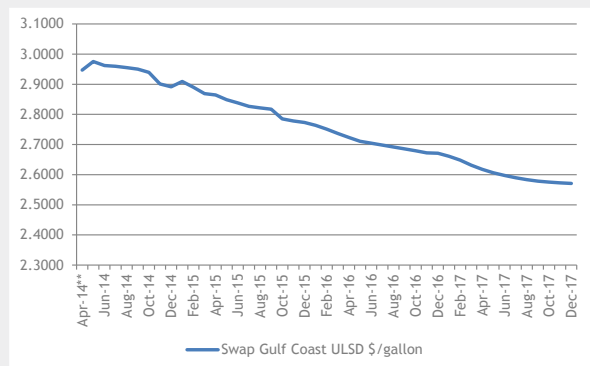
#### Methodology when market data is available

- Use executed transactions and products spreads within the bid/offer spread at 2:30 pm EST.
- If no executed transactions occurred, use the mid-point of the bid/offer spread as of 2:30 pm EST.
- Use product spreads and/or time spreads when available.

#### Analysis and computation when market data is not available

- Use various statistical models such as regression formulas or historical pricing relationships to reference markets.
- Reference markets are established by identifying the reference market as having a strong correlation to the primary market.

#### GULF COAST ULSD FORWARD CURVE



## Argus US Refined Products Forward Curves

### Illiquid Curve Example

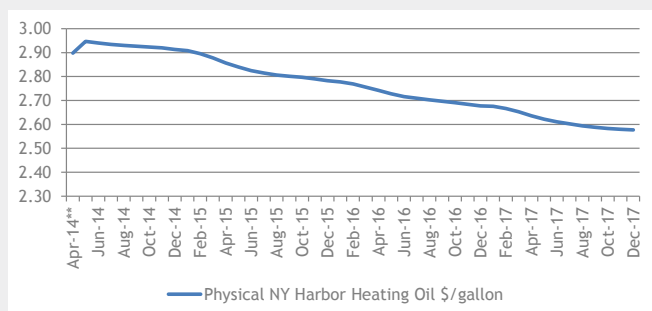
#### *New York Harbor Heating Oil*

An illiquid curve does not trade on a forward curve basis. This type of curve will typically trade only as a physical cash product, characterized by a lack of swaps contract, or trade largely on a prompt physical basis.

#### Analysis and computation when market data is not available

- Use a regression formula or other relationship between NYH Heating Oil and its reference market.
- Make sure that the approach chosen on a given day does not cause the NYH Heating Oil curve to experience a price change that is not commensurate with the futures markets, reference markets and other refined products curves.
- If the statistical approach employed is not yielding a curve value that is fair and reasonable, use the prior day's differential to futures curve with the current day's futures curve to derive a fair market curve value for a given day.

#### NEW YORK HARBOR HEATING OIL FORWARD CURVE



### Key Features

- Daily assessments for 31 US Refined Products markets
- Data includes balance of the month prices, prompt year and three-years forward
- Time-stamped at 2:30 p.m. EST, in alignment with the daily NYMEX settlement
- Basis differentials to CME Nymex ULSD (HO) and RBOB (RB) futures contracts
- Independent and transparent market-appropriate methodology
- Delivery options include: Email, FTP data feed and third party delivery partners

### Applications

- Forward curve validation
- Mark-to-market accounting
- Value-at-risk
- Deal valuation
- Potential future exposure
- Scenario analyses
- Valuing option premiums

### Who is Argus?

Argus is a leading provider of data on prices and fundamentals, news, analysis, consultancy services and conferences for the global crude, oil products, LPG, natural gas, electricity, coal, emissions, bioenergy, fertilizer, petrochemical, metals and transportation industries.

Data provided by Argus is widely used for indexation of physical trades. Companies, governments and international agencies use Argus information for analysis and planning purposes.

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