



Asian/Eastern Jet Fuel Index:
Methodology

Abstract

Current methods employed by airlines to hedge their fuel requirements are inadequate in their purpose to reduce basis risk. This document considers other available contracts, their traded volume, and data from the EIA concerning regional jet fuel demand, in order to determine their viability and suitability for use in a hedging index. The Onyx Asian/Eastern Jet Fuel Benchmark uses a basket of contracts which provides a more comprehensive and basis-reducing method for airlines in the Asian region to hedge.

Introduction

Fuel costs are an airline's biggest single cost, contributing up to 60% of total costs. This is a hugely volatile part of their balance sheet and close consideration must be taken for fuel price risk management when setting strategic goals. In Asia, airline companies frequently hedge using Brent crude futures to hedge their jet fuel consumption, as crude is the source of jet price and the prices of the two are normally positively correlated and offers greater liquidity than straight Jet Fuel flat price contract. However, this leaves open to a great deal of basis risk as the crack (the difference between crude and jet fuel prices) is a volatile differential. In recent years we have seen this as high as \$23 and as low as -\$13 which is effectively unhedged by trading Brent futures alone. Airlines therefore require a more accurate hedge that also offers them the liquidity to execute a basis limiting hedge in an efficient manner in order to minimise costs. The Onyx Asian/Eastern Jet Fuel Benchmark offers that solution.

Many may find themselves in a difficult position to hedge, as airlines do not have the in-house expertise to analyse the crude or jet fuel markets and structure efficient hedging programs that mimic their physical exposure accurately. This leads them to either pay unnecessarily high costs for structures that have excessive basis risk or avoid hedging completely which leaves them fully exposed to oil price volatility.

Onyx believes that a perfect hedge cannot be solely reliant on crude as a hedging instrument as it is subject to many factors, such as macro events, unpredicted outages and geo-political tensions, which are impossible to predict to a certain degree. Therefore, the more educated method would be to utilise a practical and demand-based solution and devise a hedging index that airline companies can rely on. The Onyx Asian/Eastern Jet Fuel Benchmark was created to offer airlines an efficient solution for fuel price risk management whilst giving boards previously inaccessible price transparency over the jet fuel market.

Proposal

$$\text{Asian/Eastern Jet Fuel Index} = 82\% \times \text{Sing Kero Jet Fuel} + 18\% \times (\text{Sing Kero Jet Fuel} + \text{TC5 Freight Contract})$$

Justification

Having researched and spoken with representatives from both the Intercontinental Exchange (ICE) and the Chicago Mercantile Exchange (CME), there is only one contract available that would be suitable for hedging Jet fuel in the Asian region:

Table 1

No	Product Name
1	Singapore Jet Kerosene Swap

As there is only one contract available it is not necessary to take into account relative liquidity of varying contracts. Therefore, we have adopted a purely demand-focused approach to construct our index formula. We have gathered consumption data for the largest demand locations in Asia and the Middle East from the Energy Information Administration (EIA), an independent statistical agent that collects energy-related data and is a reliable and unbiased source, to create a picture of consumption across the region [1]. Furthermore, we have used IHS Markit research to extrapolate data from 2016 onwards for some regions [2]. For the Middle East, a demand growth expectation of 2.2% was used. This data is displayed in **Table 2**.

Table 2

Region	Consumption kb/d						Average Consumption %
	2015	2016	2017	2018	2019	2020	
China	629	679	695	712	729	747	28%
Japan	222	225	231	237	249	261	9%
South Korea	126	135	140	147	154	162	6%
Hong Kong	127	134	137	141	144	147	5%
India	136	152	160	168	176	185	6%
Australia	142	150	158	163	165	168	6%
Middle East	396	406	453	463	473	484	18%
Singapore	150	159	163	167	171	175	6%
Rest of Asia and Oceania	499	556	675	681	686	688	25%
Total	2427	2596	2812	2344	2461	2584	

Source: EIA, IHS Markit [2]

With only one contract available, it would seem that creating an Asian/Eastern jet fuel index would be impossible. However, we have divided the group into two sub-regions from a geographical perspective, the Middle East and the rest of Asia, with a view to creating a 'synthetic' Jet fuel contract via the sing contract and a freight netback. The consumption data for these regions is contained in **Table 3**.

Table 3

Region	Consumption kb/d						Average Consumption %
	2015	2016	2017	2018	2019	2020	
Middle East	396	406	453	463	473	484	18%
Asia and Oceania	2031	2190	2359	1881	1988	2100	82%
Total	2427	2596	2812	2344	2461	2584	

Given this new subdivision and taking the relative proportions of total jet fuel consumption for each. We constructed the following formula for our Jet fuel Index:

$$\text{Asian/Eastern Jet Fuel index} = 82\% \times \text{Sing Kero Jet Fuel} + 18\% \times (\text{Sing Kero Jet fuel} + \text{Freight from Arab Gulf to Singapore})$$

We then face the question of finding an appropriate freight contract to use in our netback calculation for the Middle East portion of our formula. From research on ICE we have found the following AG to Asia freight contracts are available:

Table 4

No	Product Name
1	TD3C FFA Middle East Gulf to China (Baltic) Future
2	TC5 FFA Arabian Gulf to Japan (Platts) Future
3	TD8 FFA Kuwait to Singapore (Baltic) Future

However, of the three contracts, only the TC5 contract is significantly liquid and therefore suitable to make tight and tradable markets in. As such, we shall use this as a proxy for the freight rate from the Arab Gulf to Singapore. This leads us to our final formula:

$$\text{Asian/Eastern Jet Fuel Index} = 82\% \times \text{Sing Kero Jet Fuel} + 18\% \times (\text{Sing Kero Jet Fuel} + \text{TC5 Freight Contract})$$

We believe this index will reduce basis risk and be a more accurate hedging tool for airlines in Asia to reduce their Jet fuel price exposure.

Conclusion

To conclude, we have identified the need for a more accurate and basis risk-reducing hedging instrument to replace the current use of Brent Futures. We believe our solution offers airlines the opportunity to more effectively manage, and ultimately reduce their fuel costs while providing a transparent and easily available price.

References

1. Louise Vertz, Sandeep Sayal (January 2018), Long-Term Jet Fuel Outlook

<https://cdn.ihs.com/www/pdf/Long-Term-Jet-Fuel-Outlook-2018.pdf>

2. Government Data: Consumption - US Energy Information Administration (EIA)

<https://www.eia.gov/odata/qb.php?category=2135044>

Disclaimer

This publication has been prepared by Onyx Commodities Limited on behalf of Onyx Capital Advisory Limited, both of which are regulated by the Financial Conduct Authority. It is provided to clients of Onyx Capital Advisory Limited for informational purposes only and any persons acting on information contained in this publication do so solely at their own risk. The information contained in this publication has been obtained from sources that we believe to be reliable, but we do not represent or warrant that it is accurate or complete. The opinions in this publication are those of Onyx Commodities Limited and may be subject to change. The information contained herein is provided as of the date indicated, may not be complete and is subject to change with no obligation on the part of Onyx Commodities Limited to revise or update its content. This publication is directed at Eligible Counterparties and Professional Clients as defined by the Financial Conduct Authority. Any reproduction of this publication without prior written permission from the publisher is strictly prohibited. Onyx Commodities Limited reserves the right to modify content or cancel publications without due notice. Any communication with, or questions from, clients must only be directed to Onyx Capital Advisory Limited. Onyx Commodities Limited does not have the regulatory permissions to act in any kind of advisory capacity.

Onyx Commodities Limited may hold existing long or short positions in the investments described in the publication.