

# Methodology and specifications guide

## China Oil Analytics

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## Scope of service

Platts China Oil Analytics aims to provide detailed analysis and forward looking views on the key developments and supply/demand trends in China's oil markets. This document outlines the key sources and methodologies which are used in the data, forecasts and analysis.

## Contact us

For further information, queries or feedback, please reach out to any member of our analyst team at:

[chinaoilanalysts@spglobal.com](mailto:chinaoilanalysts@spglobal.com).

## Frequency of publication

The China Monthly Analysis Report is published on the home page of China Oil Analytics ([www.chinaoilanalytics.platts.com](http://www.chinaoilanalytics.platts.com)) within the first five working days of each month.

## Frequency of data updates

As Chinese government agencies are a key source of data, updates may be delayed by official holidays (such as the Lunar New Year/Spring Festival). Forecast data is recalibrated and updated as and when new official data becomes available. Government data will typically be updated between the 10th and 26th of each month, with refinery throughput, crude production and trade data generally available by the 15th.

## Data and analysis sources

Key sources of data used in the database and analysis reports include:

- Platts price assessments, Market on Close data, news and other resources
- China's General Administration of Customs

- China's National Bureau of Statistics
- China Petroleum and Chemical Industry Federation
- Official company reports, news releases and statements
- Local news media and third party information providers

## Forecasting

Platts China Oil Analytics includes forecasts of crude and oil product volumes of output, imports, exports and apparent demand. Platts China Oil Analytics utilizes a custom statistical model built upon a combination of historical data, seasonal patterns and long-term growth projections to produce a preliminary set of forecasts. These are adjusted by taking into account a variety of factors such as economic climate, inventory levels, margins, consumption patterns, seasonality and government regulation. The resulting forecasts represent the analysts' baseline expectations of how supply and demand fundamentals will progress given the data and information known at the time.

Platts China Oil Analytics does not include forecasts of prices.

## Timeframe of analysis and forecasts

The Platts China Oil Analytics data modeling and reports are updated monthly and cover a rolling period of up to 12 months ahead.

## Commodities covered

Coverage includes the following crude and oil product types:

On occasion, there may be extended coverage of other commodity types.

## Refining capacity

Products	Description	Conversion
Crude	All crude oil grades	7.33 barrels/mt
LPG	All propane and/or butane	11.60 barrels/mt
Naphtha	Petrochemical feedstock use	9.00 barrels/mt
Gasoline	All gasoline grades, including road and off-road use	8.50 barrels/mt
Jet Fuel	All kerosene, including aviation and non-aviation use	7.90 barrels/mt
Gasoil	All gasoil grades, including road and off-road use	7.45 barrels/mt
Fuel Oil	All residual fuel oil, including bunker, power and teapot refinery processing use	6.35 barrels/mt

Nameplate capacity of units is used for existing refineries. Capacity information is collated from official company data, government sources, industry associations, media reports and other third-party sources. Expected nameplate capacity is applied for future projects that Platts China Oil Analytics believes are highly likely to come on line. "High likelihood" is defined as projects already under construction, committed, or announced and judged to be highly credible. The closure dates of uncompetitive units may also be projected. Platts China Oil Analytics does not include or assume 'speculative' capacity beyond those projects highly likely to come online or go offline.

A conversion ratio of 7.33 barrels per metric ton is used for all refinery unit types.

## GDP and other macroeconomic indicators

Platts utilizes official data from the National Bureau of Statistics and the General Administration of Customs for a wide variety of non-oil economic indicators such as Gross Domestic Product (GDP), industrial output, inflation, fixed asset investment, motor vehicles sales and trade data. Oil demand is closely linked to economic activity so projected macroeconomic indicators are used as a factor in oil demand forecasts.

## Refinery crude throughputs and production

Total refinery crude throughput is taken from data released by

the National Bureau of Statistics. Historical and planned run rates for individual refineries are compiled monthly by Platts and third-party information providers through surveys of refinery operators. Forecasts of future throughput rates are formulated using this survey data, together with information on crude and oil product inventory levels, capacity additions or closures, consumption, seasonal factors, turnaround maintenance periods and unplanned outages.

### Refining margins

Margins are calculated to be indicative of coking (complex) refineries operating in China.

*Margins = [Product yields x Product prices] – [Crude prices + Shipping cost] – [Variable operating cost] – [Taxes]*

### Oil product yields

The following are the yields used for all crudes in calculating refining margins as of January 2018. This reflects the production yield for each oil product as reported by China's National Bureau of Statistics and is subject to change in line with production patterns in China.

### Crude prices

LPG	Naphtha	Gasoline	Jet/kerosene	Gasoil	Fuel oil
11%	8%	31%	9%	37%	4%

Key benchmark crudes are representative of major supply sources to China, namely the Middle East (Dubai), Russia (ESPO), West Africa (Cabinda) and domestic production (Shengli).

- Platts Dubai
- Platts ESPO FOB Kozmino
- Platts Cabinda FOB Angola
- Platts Shengli FOB China

### Oil product prices

- LPG (ex-refinery)
- Naphtha (ex-refinery)
- Gasoline 92 RON (ex-refinery)
- Jet Fuel (ex-refinery)
- Gasoil 10 ppm sulfur (ex-refinery)
- Fuel Oil (ex-refinery)

### Variable operating cost

Proxy calculation for costs of electricity, fuel, catalysts and chemicals consumed during the refining process.

### Shipping costs

From Platts freight assessments

### Taxes

Currently includes applicable consumption taxes, 17% value-added tax and other miscellaneous taxes amounting to 10%. These are taxes on city maintenance and construction (5%), central government education surcharge (3%) and local education surcharge (2%).

### Imports/exports

The key source of data on commodity volumes imported to and exported from China is the General Administration of Customs. Crude and oil product balances are forecast by taking into consideration additional factors such as local supply/ demand conditions, consumption patterns, inventory levels, regional and domestic prices and margins and import/export quotas.

### Jet fuel

Export data for jet/kerosene reported by the General Administration of Customs includes volumes exported to bonded storage zones in

China earmarked for sale and consumption on outbound aviation flights. Platts China Oil Analytics publishes the full export data given by GAC in the section titled 'Crude and Product Import and Export'. However when calculating actual cargo exports and apparent demand for jet/kerosene, Platts China Oil Analytics adjusts this data to exclude consumption of jet fuel in bonded zones. The adjusted data is reflected in the section titled 'Crude and Product Balances'.

### Fuel oil

Platts China Oil Analytics calculates imports of petroleum bitumen blend, reported by the General Administration of Customs under HS code 27150000, as part of fuel oil imports, and by extension, part of apparent fuel oil demand.

Fuel oil exports reported by the GAC almost exclusively comprise cargoes sent to bonded storage zones for use as bunker fuel in ships on outbound voyages. These volumes are not considered exports and therefore are not calculated to be a part of fuel oil apparent demand.

### China-Singapore price differentials

Calculated to be indicative differentials between Chinese domestic ex-refinery prices and Singapore prices.

*Differential = [China Ex-refinery prices – Taxes] – [Singapore prices]*

### Taxes

Currently includes applicable consumption taxes, 17% value-added tax and other miscellaneous taxes amounting to 10%. These are taxes on city maintenance and construction (5%), central government education surcharge (3%) and local education surcharge (2%).

### China prices

Sinopec ex-refinery Gasoil 10ppm sulfur  
Sinopec ex-refinery Gasoline 92 RON  
Sinopec ex-refinery Jet Fuel  
Sinopec ex-refinery Naphtha

### Singapore prices

Platts Gasoil 0.005%S (50 ppm) FOB Singapore  
Platts Gasoline Unl 92 RON FOB Singapore  
Platts Jet Kero Singapore  
Platts Naphtha C+F Japan

## Price details

### China crude prices

- **Shengli:** supply price for Shengli crude offered by Sinopec
- **Daqing:** supply price for Daqing crude offered by PetroChina

### China product wholesale prices

- **Gasoline and Gasoil:** price of truck cargo deals in Zhejiang province's wholesale market assessed by JLC. Typically, cargo sizes are 50-100 mt. The price for gasoline reflects Phase5 (10 ppm sulfur), 92 RON specification sold by Sinopec while that for gasoil reflects Phase 5 (10 ppm sulfur) specification, also sold by Sinopec.

### China ex-refinery prices

- **Gasoline:** supply price for Phase 5 (10 ppm sulfur), 92 RON gasoline from Sinopec refineries to internal sales units
- **Gasoil:** supply price for Phase 5 (10ppm sulfur) diesel from Sinopec's refineries to internal sales units

- **Naphtha:** supply price from Sinopec's refineries to petrochemical subsidiaries
- **Jet Fuel:** supply price from refineries to China National Aviation Fuel (CNAF)
- **LPG:** open market price from refineries
- **Fuel Oil:** open market price from Shandong teapot refineries supplied by third-party information providers

### Platts crude and product benchmarks

Please refer to [www.platts.com/methodology-specifications/oil](http://www.platts.com/methodology-specifications/oil).

## Inventories

Data on inventories reflects month-on-month percentage changes provided by China Oil, Gas and Petrochemicals published by Xinhua. Platts China Oil Analytics uses this data to calculate inventory levels as well as the resulting year-on-year changes. The data reflects commercial inventories of crude oil,

gasoline, gasoil and jet fuel.

Separately, Platts China Oil Analytics also receives other inventory data, including those held by independent refiners, from third-party data providers. These are currently not published on the Platts China Oil Analytics online platform but discussed in the China Oil Analytics monthly report.

## Demand

No data for Chinese oil demand is available from any official source. All demand figures in Platts China Oil Analytics are "apparent demand", calculated by the formula:

$$\text{Apparent demand} = \text{Domestic output} + [\text{Imports} - \text{Exports}]$$

*As such, apparent demand does not take into account inventory builds or draws, or any other variables outside of its three components. Therefore, apparent demand should not be taken as being equivalent to product sales or end-use consumption.*

**GLOSSARY**

<b>Subject</b>	<b>Description</b>	<b>Source(s)</b>
<b>Price</b>		
Ex-refinery	Refinery gate prices set by refineries	Platts China Oil Analytics and third-party information providers
E China Wholesale	East China regional average prices surveyed from local wholesalers	Platts China Oil Analytics and third-party information providers
Crude Daqing	Monthly price reported by PetroChina	Platts China Oil Analytics and third-party information providers
Crude Shengli	Monthly price reported by Sinopec	Platts China Oil Analytics and third-party information providers
<b>Commodity</b>		
Crude oil	All crude oil grades, including condensates	
LPG	All propane and/or butane	
Naphtha	Petrochemical feedstock use	
Gasoline	All gasoline grades, including road and off-road use	
Jet fuel	All kerosenes, including aviation and non-aviation use	
Gasoil	All gasoil grades, including road and off-road use	
Fuel Oil	All residual fuel oil, including bunker, power and teapot refinery processing use	
Light Cycle Oil	Key blending component for gasoil in China	
Mixed Aromatics	Key blending component for gasoline in China	
<b>Refining</b>		
CDU	Crude Distillation Unit, primary distillation capacity	
Coker	Delayed coker / Fluid coker / Flexicoker	
FCC/RFCC	Fluid Catalytic Cracking / Residual Fluid Catalytic Cracking	
Gasoline Desulfurization	Gasoline and/or Naphtha desulfurization	
Distillate Desulfurization	Diesel and/or Kerosene desulfurization	
Residual Desulfurization	Fuel oil and/or other heavy residue desulfurization	
<b>Tax</b>		
<b>Consumption Tax</b>		China's Ministry of Finance
Crude oil	0.00	
LPG	0.00	
Naphtha	Yuan 1.52 per liter (Yuan 2,175 per mt)	
Gasoline	Yuan 1.52 per liter (Yuan 2,054 per mt)	
Gasoil	Yuan 1.20 per liter (Yuan 1,421 per mt)	
Jet fuel	Currently waived	
Fuel oil	Yuan 1.20 per liter (Yuan 1,211 per mt)	
Petroleum bitumen blend	0.00	
Mixed aromatics	0.00	
<b>Value-Added Tax</b>		China's Ministry of Finance
LPG	0.13	
Crude oil, all other oil products	0.17	
<b>Import Tax</b>		China's General Administration of Customs, Ministry of Finance
Crude oil	0.00	
LPG	0.01	
Naphtha	0.00	
Gasoline	0.01	
Gasoil	0.01	
Jet fuel	0.00	
Fuel oil	0.01	
Petroleum bitumen blend	8% (0% for ASEAN-origin imports)	
Mixed aromatics	7% (0% for ASEAN-origin imports)	
<b>Export Tax</b>		China's General Administration of Customs, Ministry of Finance
Crude oil	0.05	
Oil products	0.00	

**DATA SOURCES**

Series	Source
<b>Macroeconomic data</b>	
Gross Domestic Product (GDP)	NBS
Consumer Price Index (CPI)	NBS
Retail sales	NBS
Fixed Asset Investment	NBS
Construction	NBS
Passenger Vehicle Sales	CAAM
Commercial Vehicle Sales	CAAM
Total imports	GAC
Total exports	GAC
Gross Industrial Output	NBS
Purchasing Managers Index (PMI)	NBS
Steel production	NBS
Ethylene production	NBS
Benzene production	NBS
Rail transport	NBS
Ship transport	NBS
Air transport	NBS
Highway transport	NBS
<b>Oil data</b>	
Crude demand	Platts China Oil Analytics
Oil demand	Platts China Oil Analytics
LPG demand	Platts China Oil Analytics
Naphtha demand	Platts China Oil Analytics
Gasoline demand	Platts China Oil Analytics
Jet Fuel demand	Platts China Oil Analytics
Gasoil demand	Platts China Oil Analytics
Fuel Oil demand	Platts China Oil Analytics
Crude Oil import quotas	Platts China Oil Analytics

Series	Source
Crude imports	GAC
LPG imports	GAC
Naphtha imports	GAC
Gasoline imports	GAC
Jet Fuel imports	GAC
Gasoil imports	GAC
Fuel Oil imports	GAC
Light Cycle Oil imports	GAC
Petroleum Bitumen Blend imports	GAC
Mixed Aromatics imports	GAC
Crude exports	GAC
LPG exports	GAC
Naphtha exports	GAC
Gasoline exports	GAC
Jet Fuel exports	GAC, Platts China Oil Analytics
Gasoil exports	GAC
Fuel Oil exports	GAC, Platts China Oil Analytics
Bonded Trade Zone	GAC
Crude output	NBS
LPG output	NBS
Naphtha output	NBS
Gasoline output	NBS
Jet Fuel output	NBS
Gasoil output	NBS
Fuel Oil output	NBS
Crude and oil product stocks	JLC, China OGP, Platts China Oil Analytics

Series	Source
<b>Prices and margins</b>	
Shengli crude	JLC
Daqing crude	JLC
Diesel Sinopec ex-ref	JLC
Gasoline Sinopec ex-ref	JLC
Jet Fuel Sinopec ex-ref	JLC
Naphtha Sinopec ex-ref	JLC
Diesel E.China wholesale	JLC
Gasoline E.China wholesale	JLC
LPG E.China wholesale	JLC
China vs regional Gasoil price differentials	Platts China Oil Analytics
China vs regional Gasoline price differentials	Platts China Oil Analytics
China vs regional Jet Fuel price differentials	Platts China Oil Analytics
China vs regional Naphtha price differentials	Platts China Oil Analytics
Refining margins	Platts China Oil Analytics
<b>Refining</b>	
Refinery runs	JLC, Platts China Oil Analytics
Refinery maintenance	JLC, Platts China Oil Analytics
Refinery capacities	JLC, Platts China Oil Analytics
Planned refinery capacity	JLC, Platts China Oil Analytics
Independent refinery throughput and feedstocks	JLC

**Glossary:** CAAM: China Association of Automobile Manufacturers; China OGP: China Oil Gas and Petrochemicals; GAC: General Administration of Customs of China; JLC: JLC formerly JYD Information; NBS: National Bureau of Statistics of China