

KEY PROCESSES

HOW PHYSICAL ARBITRAGE WORKS

Global commodity traders seek to identify and respond to supply and demand differentials between linked markets. They use arbitrage to trade physical commodities without incurring price risk. They hedge price exposure using exchange-traded contracts and over-the-counter instruments.

Trafigura is one of the world's leading independent commodity trading and logistics houses. Every day, around the world, we are advancing trade – reliably, efficiently and responsibly.

Find out more at www.trafigura.com

TRANSFORMATION IN SPACE: GEOGRAPHIC ARBITRAGE

Geographic arbitrage identifies temporary price anomalies between different locations. We employ our global network and local storage facilities to take advantage of changing supply and demand conditions. For example, demand for heating oil typically rises when the weather is cold. Traders can buy heating oil during the northern hemisphere's summer months and transport it to the southern hemisphere to take advantage of this seasonal variation.

TRANSFORMATION IN TIME: TIME ARBITRAGE

Time arbitrage seeks to benefit from the shape of the forward curve for physical delivery. In contango markets, when investors are paying a premium for forward delivery, we do a cash-and-carry arbitrage. For instance, we would buy coal now, store it, then sell it back on the forward date. We hedge our price risk and lock in premium by selling coal futures today and buying them back on the forward date. In backwardated markets (when forward delivery is cheaper than immediate delivery) the reverse cash-and-carry arbitrage is available.

TRANSFORMATION IN FORM: TECHNICAL ARBITRAGE

Technical arbitrage seeks to benefit from the different pricing perceptions for particular commodity grades and specifications. We use our trading knowledge, global network and storage and blending capabilities to formulate the commodities our customers need. In the US, for instance, gasoline is sold with 10 percent ethanol content and the precise formulation varies state to state. We can earn margin by sourcing ethanol and gasoline separately and blending products to meet bespoke specifications.

ARBITRAGE CASE STUDY: HOW IT WORKS

Timing, location and product quality are critical for producers, refiners, smelters and industrial users. We source, store, blend and deliver physical commodities worldwide to bridge those gaps.

We generate sustained, low-risk profits by matching commodities, timing and delivery locations to our customers' business priorities. We have invested internationally in infrastructure and logistics to optimise trade flows and meet their requirements.

In practice, Trafigura will often employ more than one arbitrage technique in a single transaction. The following example shows how arbitrage techniques may be combined to optimise copper concentrate trading flows.

EXISTING TRADE FLOWS

Prior to this transaction, Trafigura had arranged to source copper concentrates via an offtake agreement with a Peruvian mine (1). It had also agreed to deliver copper concentrates to a Finnish smelter (2).

GEOGRAPHIC ARBITRAGE

Trafigura subsequently identifies a geographic arbitrage opportunity. It switches its supply source for the Finnish smelter and finds a different buyer for the Peruvian concentrates.

Next, Trafigura sources concentrates for the Finnish market at a Spanish mine (3). It delivers the Peruvian concentrates to a US smelter (4). These two transactions result in much shorter delivery journeys and yield a significant reduction in overall freight costs compared with the original Peru to Finland route.

TIME ARBITRAGE

Trafigura ships concentrates to the Finnish smelter according to the originally agreed schedule, but the US smelter wants delivery in six months' time.

With the copper market in contango, Trafigura now identifies a time arbitrage.

The US smelter is prepared to pay a premium for forward delivery in six months. Trafigura stores the Peruvian concentrate safely and securely at Impala Terminals warehouse. (5).

TECHNICAL ARBITRAGE

The US smelter requests a particular specification for its concentrate. Trafigura can meet this requirement cost-effectively by blending the Peruvian concentrate in its warehouse to create the required grade synthetically (6). This technical arbitrage earns it additional margin.

Finally, the blended concentrates are shipped to the US smelter, arriving six months later as agreed. The combination of arbitrage techniques has increased Trafigura's profitability and price competitiveness.

