

Product Profile

Freight Derivatives

By Neil Levy

The freight forward market has all the signs of a market whose day has come. Volume and volatility skyrocketed in 2004, attracting widespread attention among hedge funds and other trading firms. Liquidity has increased, with brokers quoting prices as far out as 2007, and more and more counterparties are willing to make more complex trades such as spreads and options.

Of particular interest to the futures industry, demand for clearing has stepped up noticeably. Freight forwards, which essentially are cash-settled forwards based on the shipping rates for ocean freight, are traded primarily over the counter, but a number of market participants are pushing for a clearing solution as a way to reduce counterparty risk. Earlier this year the New York Mercantile Exchange began listing freight forwards on its clearing platform, and LCH.Clearnet is expected to make a similar move in mid-September. They join Norway's NOS clearinghouse, which has been offering this service since October 2001 and cleared contracts worth \$4.1 billion in 2004.

The trading of freight forward agreements (FFA) began in the early 1990s, but this was a sleepy market until about three years ago. As with a host of other commodity markets, the China angle was a big part of the story. The rapid growth of the Chinese economy naturally caused a very significant increase in the business of shipping goods to China. That in turn created much greater demand for freight forwards as a means for both ship owners and their customers to manage shipping costs.

A related but separate factor has been the dramatic increase in the price of oil over the last several years, which has focused attention on all manner of energy related products. Freight forwards, particularly those based on the shipping costs for oil tankers, have been very sensitive to any factors affecting the supply and demand of crude oil, and this has created many opportunities for arbitrage.

In 2004, a number of factors created the setting for the perfect storm. The shipping market already was near record utilization rates. Then Hurricane Ivan hit the Gulf of Mexico and caused significant damage to the pipelines feeding offshore rigs. The resulting supply disruption sent prices in the FFA market to record highs. This attracted very strong interest from hedge funds and other traders looking for volatility, and set the stage for the efforts to bring clearing to this marketplace.

FFA prices were trending downward this year until Hurricane Katrina devastated the Gulf of Mexico coast. The hurricane severely disrupted energy facilities in the region, and as market participants scrambled to find alter-

native supplies, shipping rates for certain routes to the U.S. rose by more than 50% in a single week.

2010. All this suggests significant fluctuation in FFA prices for the foreseeable future and an increasing amount of trading activity. What does this mean to the futures industry? Much depends on the success of clearing. Nymex and its chief rival, Intercontinental-Exchange, are well on the way to success with the clearing of derivatives based on natural gas, crude oil, electricity and other energy products traded in the over-the-counter markets. The FFA market has some similar characteristics, and a similar need for clearing to reduce credit risk and allow more trading firms to enter the market. If Nymex and LCH.Clearnet succeed, clearing firms will have another opportunity to extend their services.

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Looking ahead, there are good reasons to expect the freight derivatives market to continue to grow. There is a great debate going on around the industry regarding the supply of tankers coming into the market over the next few years. Some see a continuing shortage, while others predict a large increase in shipping capacity. On the demand side, the huge appetite for oil in the U.S. and the tremendous growth rate of consumption by China leads to heated debates as to where the price of energy transportation will go over the next few years. Adding to the discussion is the retirement of single hull tankers by the year

The FFA Market

FFAs are derived from the chartering rates set by ship owners and their customers. These rates apply to ocean-going vessels that move commodities from production to market zones. Crude oil, coal, grain, iron ore are all examples of commodities shipped by ocean-going vessels.

The shipping business is generally divided into “wet” and “dry” categories. Wet covers crude and refined petroleum products, while dry covers everything else. The wet market is further broken down between “dirty” or crude oil markets and “clean” or refined product markets.

Carnegie, a Nordic investment bank, estimates the value of the underlying spot market at around \$90 billion in 2004, and the freight derivatives market at \$32 billion. Dry accounted for the majority of this market—\$25 billion in 2004, versus just \$7 billion for

wet. But wet is growing far more rapidly, from 5% of the market in 2003 to 16% in 2004 to an estimated 40% in 2005. In addition, clearing has made much greater inroads into the wet market, with 60% of the trading being cleared in 2004, versus just 5% of the dry market. For that reason, this article will focus primarily on the wet market.

The physical shipping market trades spot "fixings" or in longer term "time charter" contracts. These typically trade in 12 to 36-month time horizons but can go out as long as ten years. Many physical brokers service the daily spot and time charter markets, such as Clarkson, Simpson Spence & Young, Mcquilling Brokerage Partners, Poten & Partners, and Mallory Jones Lynch Flynn. These brokers contribute to the establishment of a daily index known as the Baltic Index of Tanker Rates or BITR. The index is compiled by the Baltic Exchange, a 250 year-old exchange based in London that has been the focal point for the world shipping community for many years.

In the FFA wet market, contracts are settled primarily on the basis of the BITR, and secondarily on similar broker survey indices produced by Platts. The indices are broken down by trade routes, such as Arabian Gulf to Japan, West Africa to the U.S. Atlantic coast, and so on, then further divided by class of vessel.

Not all routes trade in the derivative market. TD3, the route between the Middle East and Japan, is by far the most actively traded route, followed by TD5 (West Africa to U.S. Atlantic Coast), TC2 (Europe to the U.S. Atlantic Coast), and TC4 (Singapore to Japan). Contracts are traded in thousands of metric tons and on any given day volume could be between 2,500 and 3,500 contracts.

A small number of brokers quote option prices as well as forwards. With volatility over 100% in the front month, why not! Quotes regularly come across the Yahoo messenger, the unofficial communication network of the industry, for outright calls and puts or quite often call and put spreads. The quotes start rather wide but when two serious players look to execute, the bid/offer spreads narrow down to two or three points and trades go through.

While 10 and 20 thousand metric tons (kmt) is the norm, 50 and 100 kmt can get done only a few points away from the quoted market.

Another sign that this market has potential to take off is the way liquidity begets liquidity. When an otherwise sleepy trade route gets some price activity, it often seems that everyone who has been sitting on the sidelines jumps in. For the next week prices are posted on that route rather consistently.

Freight Fundamentals

From a seasonal perspective the market is similar to oil—strong leading up to the winter and softer in the early spring and summer. Of course, what happens in any given year depends on many other factors. On the demand side, inventory builds, heating demand, power consumption, and overall economic growth all influence the price a vessel will lease for in the spot fixing market. On the supply side, weather is the great unpredictable, with extreme events such as hurricanes and typhoons having very disruptive effects on the availability of shipping in a particular region. These effects can ripple out to other regions as ships are redeployed to meet the resulting shortage.

All of these factors contribute to what has made for a rather volatile market the last few years. While the full impact of Hurricane Katrina is not clear yet, one only has to look back to Hurricane Ivan to get a sense of the potential effects. In the fall of 2004, Ivan sud-

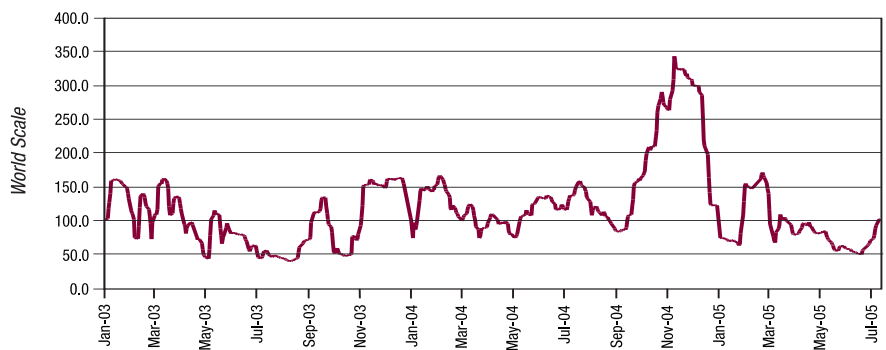
denly created a huge demand for oil to be shipped to the U.S. from other parts of the world to replace the disrupted supply from the Gulf of Mexico. Tanker rates soared and the benchmark TD3 rate for VLCCs (very large crude carriers) jumped from roughly 90 WS (\$49,000/day) to over 300 WS points (\$210,000/day) in November. The damage caused by the hurricane was soon cleared up, and by January prices had fallen all the way below 100 WS. Ivan was an anomaly, but prices continued to bounce around this spring and summer. Over the whole period, the implied volatilities traded in the market have ranged from roughly 45% to over 110%.

Who Are the Participants?

Like the energy sector, wet FFA trading is conducted out of Singapore, London and New York, with an influx of traders anticipated out of Houston in the near future. Many of the traditional energy derivative brokers such as GFI, Prebon and TFS have teamed up with physical tanker brokers to provide a combined expertise in execution and market insights.

Traditionally trading was done over the telephone, but more and more trades are conducted on electronic trading platforms operating over the Internet. These screens let users view prices and in some cases offer full execution capabilities. The leading platform, at least in terms of the quality of pricing and range of coverage, is Imarex, a company based in Oslo

**Daily Prices for the TD3 Route
West Africa to U.S. Atlantic Coast**



Source: Imarex

that was started as a joint venture by several shipping industry companies and NOS, the Norwegian futures and options clearinghouse.

Imarex officially opened its market for freight derivatives in November 2001. At last count its screens covered 12 clean and dirty routes. Prices are listed monthly for the first six months then quarterly for six more quarters and calendar quotes are posted for two years out. Imarex also provides a direct link to NOS, and traders can request NOS clearing at the time of execution.

Not surprisingly, the investment banks and oil companies have jumped in. Naturally Goldman Sachs and Morgan Stanley with their large energy departments are involved, and Barclays Bank, Deutsche Bank and Dresdner Bank offer both trading and clearing. Among the oil companies, BP, ConocoPhillips, Shell and Total have been active participants along with Hess Energy Trading, a proprietary trading company partially owned by Amerada Hess. Other players include Duke, Koch Industries, Glencore, Mitsui, RWE and Trafigura. And of course the shipowners both large and small have been taking advantage of the market. Among the names active in trading FFAs are A.P. Møller, Frontline, General Maritime and Overseas Shipholding Group. A quick look at the Imarex website will show about 100 members.

The Arrival of the Clearinghouses

One new development that could increase the liquidity of the market is the listing of FFA contracts on several major clearing platforms. Nymex started this spring on its Clearport platform and now offers clearing for nine contracts, all in the wet FFA market. LCH.Clearnet is scheduled to launch its clearing service in September, and is promising to clear both wet and dry FFAs. These will complement NOS, which is currently the leader but lacks the financial resources of the other two.

Last year NOS ran into a problem last year with one of its members. Navitrans Marine, a privately owned Greek shipping company, was unable to pay margin according to NOS,

resulting in an \$8.5 million default. Although NOS had enough capital to cover that loss, it has since taken several actions to beef up its credit position, including selling its stake in Imarex, cutting its dividend, and issuing new shares to Imarex and the Norwegian central securities depository.

NOS also has improved its clearing offering in other ways. Thanks to increased liquidity and better data on correlations, the clearinghouse now provides more netting on cleared contracts, leading to reduced margins. In January it began accepting contracts negotiated via the voice brokers in addition to con-

tracts traded on Imarex. In April it began netting inter-commodity spreads for the first time, starting with the most liquid routes like TD3/TD5, and in June it began clearing freight options.

NOS received permission from the Commodity Futures Trading Commission in January 2002 to clear and settle trades by U.S. persons, but there are some important limitations. All trades cleared by NOS are principal-to-principal transactions among commercial entities and investment firms. U.S. persons interested in this marketplace therefore should be aware that U.S. law limits participation to "eligible commercial entities."

Nymex has made little headway so far. Although it lists nine FFA contracts on Clearport, only four have been active so far, and just a handful of counterparties have taken advantage of the new clearing services. It appears that FFA clearing in the U.S. faces some of the same obstacles that OTC energy clearing faced a few years ago. Many counterparties have credit lines between themselves and view Clearport's margin requirements as an expensive alternative. But as the futures

market has learned, it doesn't take many defaults or near defaults to see that credit support is critical.

Both Nymex and LCH.Clearnet have well-established relationships with a wide range of clearing firms active in the energy and financial arenas, and hope to benefit from the increased participation in the freight derivatives market by financial brokers, hedge funds and investment banks. Clearing should make it easier for these companies to cross over from the futures market to the FFA market. In many cases they already have relationships with the clearing

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firms. They just add a new commodity to the list and off they go. And when a trade is posted on a clearinghouse, the contractual arrangement is simplified. There isn't a need for a lengthy ISDA documentation process.

Ultimately the success of clearing will depend on the success of the underlying market. The freight derivatives market has been extremely active over the last 12 months, but it is still a very young market. The question on everyone's mind is how volatile will rates get this season and whether liquidity will continue to grow.

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