



Hedging Your (Jet Fuel) Bets

Many carriers exercised fuel hedging opportunities and came out on top during the last few years when oil prices shot through the roof. But those who hedged too far into the future are paying a pretty severe price today.

■ By Shane Batt | *Ascend* Contributor

From January 2005 until last September, jet fuel was the single biggest expense of any airline. It was a larger expense than maintenance, passenger service and even the costs of labor. Before 2005, fuel prices were 10 percent to 15 percent of an airline's operating costs. Since January 2005, fuel prices have fluctuated between 25 percent and 40 percent of an airline's operating costs. Then, in September, the price of jet fuel began to fall rapidly in line with the cost of crude oil on the world market.

In mid-July, crude oil reached a peak of US\$147 a barrel for Brent Crude, but just eight weeks later, oil was selling for less than US\$60 a barrel. In September, the price of crude oil dropped even further and earlier this year fell below US\$35 a barrel.

Given the significant dip in jet fuel, airline chief financial officers should be extremely pleased that their highest single expense has dropped by about 70 percent, right? Well, it's not a simple "yes" because many airlines had engaged in fuel hedging and had "bet" on the wrong expectation that crude oil prices would continue to be high. When crude oil prices dropped, many airlines that were highly hedged lost a great deal of money.

While fuel price was a major driver of last year's poor aviation financial performance, fuel hedges are a major driver of poor aviation financial performance this year.

The impact of fuel hedging is even more bizarre than it sounds. If an airline had strong financial performance and good credit in 2008, then it engaged in good risk management and hedged fuel with a strong hedging policy that protected against the rise of fuel prices. This is what "good" airline CFOs did to protect their financial performance.

Airlines with poor financial performance and insufficient credit lines could not afford to hedge fuel, so they carried a great burden of risk. The CFOs of these "poor" airlines worried about the viability of their businesses as fuel prices skyrocketed because they had little protection against the unbridled rise of their largest expense. This was also reflected in the profit and loss of the airlines and in their share prices if they were publicly traded.

Strong hedging airlines, such as Southwest Airlines, made millions of dollars of profit from their hedging positions last year. Similarly, airlines with strong hedging policies saw their share prices retain value in a highly volatile market because their risk management portfolio was strong. All prudent CFOs who

had available capital or credit facilities invested in fuel hedges during 2008 for their 2009 and even 2010 fuel requirements, carefully protecting for the expectation that crude oil would continue to rise ... even above US\$200 a barrel.

Much to the happiness of consumers, the CFOs that hedged against fuel price increases were wrong. So, the "good" airlines with strong financial performance and good credit lines have lost large amounts of money on their hedges, while the struggling airlines that were unable to afford fuel hedges have "won" because fuel prices have dropped by about 70 percent. The "good" airlines are taking large reductions in their profits, while the "poor" airlines are improving their profitability. This is one of the great reversals in financial performance in the history of aviation. Since fuel hedging will have such a large impact on airline financial performance this year and next, it is important to understand more about it.

Some CFOs would now call fuel hedging "gambling" because of their current plight, but this is not really an accurate definition of the process. Fuel hedging is a form of risk management designed to protect against the fear of volatile fuel prices. When oil is perceived to be increasing, then fuel hedging becomes an



During the last couple of years, when fuel prices climbed to astronomical levels, fuel accounted for 25 percent to 40 percent of an airline's operating expense, up from 10 percent to 15 percent prior to January 2005. Those that weren't in a financial position to leverage fuel-hedging opportunities suffered tremendously, while others didn't survive.

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important way to protect an airline's financial performance.

Airlines can hedge many different commodities. For example, most airlines hedge "JetKero," which is kerosene used as jet fuel. Similarly, however, airlines can hedge crude oil or hedge the "crack spread" — the difference in price per barrel of crude oil and the price per barrel of a commodity such as JetKero. When oil is pumped from the ground at the well, transported, refined, stored and then distributed, these costs add to the price of the crude oil and affect the price of end products such as JetKero.

This difference in price is reflected in the crack spread. In addition, the demand for end products, such as petrol, fuel oil and heating oil, all vary throughout the year, adding further volatility to the crack spread.

Just in terms of the commodities, airlines have a choice of hedging JetKero, crude oil or the crack spread. Commodity hedging is only part of the hedging story, however. Since most of the costs of an airline are in U.S. dollars (jet fuel, aircraft purchases and leasing, and most maintenance costs), airlines outside of the United States or even U.S. carriers with large expenses outside of the United States also need to consider hedging currency risk.

Similarly, during volatile economic times, airlines need to hedge interest rate risk to protect against variable rate credit facilities and future loan requirements. Finally, carriers flying into the European Union increasingly need to consider hedging carbon credits to address their future expansion needs under the soon-implemented carbon offset program. Clearly, airline hedging policies are complex because they can involve jet fuel, crude oil, the crack spread, currency risk, interest rate risk and carbon credits.

To make matters a little more interesting, there are also different forms of hedging, which are essentially different strategies for controlling financial risk. Rather than examining all of the forms of financial hedging, many of which are quite complex, it's ideal to concentrate on the different forms of hedging related to JetKero — the most important form of hedging for most airlines. There are three principal forms of JetKero-hedging financial instruments:

- Self hedging — When an airline purchases JetKero at a particular price in the amount that the airline will consume,
- Fixed-price risk hedging — When an airline hedges against a specific future price of JetKero,

- Floating-price risk hedging — When an airline hedges against a volatile floating price of JetKero.

Self hedging is the simplest form of jet-fuel hedging for an airline. With this type of hedging, an airline pays a fuel supplier a fixed price for the future delivery of a percentage of the airline's jet fuel needs. The airline is said to "swap" the volatile fuel price for a fixed price that is known. Thus, self hedging is also known as a "simple JetKero swap."

Frequently, airlines will make public statements such as, "65 percent of our fuel needs for 2009 are hedged at US\$85 a barrel." Simply stated, this means that the airline has agreed to buy 65 percent of its expected 2009 consumption of fuel at the price of US\$85 a barrel for JetKero. The requirement for most airlines to be experts at hedging really originated with the rise of fuel prices in late 2004. Therefore, most small- and medium-sized airlines with hedging policies use this basic approach, which is also the one that has the biggest downside risk from a drop in fuel prices.

During the U.S. summer of 2008, simple JetKero swaps reached US\$180 a barrel. A carrier that locked in a significant portion of its 2009 consumption in July 2008 at US\$180



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In eight short weeks, beginning last July, crude oil plummeted from a high of US\$147 a barrel for Brent Crude to less than US\$60 a barrel. And while the dip brought much-needed relief to many airline CFOs around the world, those who participated in long-term hedging, counting on the oil prices to continue to climb, have taken a significant loss.

a barrel would be paying US\$128 a barrel of jet fuel premium over the current (early this year) jet fuel spot price of US\$52 a barrel. (Remember that the price of jet fuel is always higher than the price of crude oil by the amount of the crack spread.) Luckily, most airlines were very wary about buying US\$180 a barrel simple JetKero swaps last July. Nonetheless, several airlines now suffer from having locked in simple JetKero swaps at US\$105 a barrel to US\$135 a barrel.

Most airlines are still imposing fuel surcharges today, despite the low cost of jet fuel on the open market, precisely because they have simple JetKero swaps that are significantly higher than the current market price of jet fuel. Meanwhile, “poor” airlines that could not hedge last year are able to lower and even eliminate fuel surcharges at the expense of their competitors.

Larger airlines have a longer track history of fuel hedging, so they frequently use the more sophisticated fixed-price risk hedging strategy, where the airline is not fixing its price for fuel, it is protecting itself against a rising (or falling) fuel price. The airline buys a financial instrument called a “fuel future” that allows it to buy fuel in the future at a “strike price.” Fuel futures are essentially insurance policies and are, in fact, handled by financial institutions instead of fuel suppliers.

For example, an airline could buy a fixed-price risk hedge for a strike price of US\$100 a barrel and might pay about US\$10 a barrel for this hedge. If the price of jet fuel subsequently went up to US\$120 a barrel, then the airline would exercise the hedge to buy fuel at the strike price for US\$100 a barrel. The airline would thus pay the strike price plus the cost of the hedge (US\$10 a barrel) for an effective maximum price of US\$110 a barrel, even though jet fuel was selling on the open market for US\$120 a barrel.

Using the same hedge (strike price = US\$100 a barrel for a hedge cost of US\$10 a barrel), if the market price for jet fuel drops to US\$80 a barrel, the airline would not exercise the hedge against the strike price and would pay an effective US\$90 a barrel (US\$80 a barrel at market price plus US\$10 a barrel paid for the hedge). Using this hedging strategy, an airline could limit its exposure to rising jet fuel prices while not being overly hurt in the event that fuel prices dropped. Also, the airline could limit its exposure even more by watching fuel and fuel future prices and selling its futures accordingly.

For example, if fuel prices are increasing, then the value of the future increases as well. So, if the airline bought futures for more than its required consumption, it could buy fuel at the strike price to meet its needs

and sell the remaining fuel futures at a profit. However, if the airline bought futures at a level greatly exceeding its consumption and the price of fuel dropped below the strike price, then the carrier’s average price paid per barrel would increase to cover the market price plus the non-exercised hedges.

This may sound like a more complicated approach to risk management — and it is — but large carriers with strong financial managers could afford to mitigate their risks in this more sophisticated fashion. Fuel futures are an asset, so fixed-price risk hedging not only affects the profitability of the airline (profit and loss), it also affects the balance sheet of the airline.

The last type of fuel hedging, floating-price risk hedging, is the most sophisticated form of commodity hedging, but will gain substantial utilization this year because of uncertainty about world fuel prices. While fuel prices are low today because of the current economic crisis, most airline CFOs are uncertain about the impact of world events on jet fuel prices.

The Organization of the Petroleum Exporting Countries, or OPEC, is imposing production quotas to drive up crude oil prices, there continues to be wars in regions that produce crude oil and terrorism is still a worldwide concern. All of these issues could cause a rapid increase in crude oil prices with an associated impact on jet fuel prices. A floating-price fuel hedging is a risk management strategy that protects against rising and falling jet fuel prices concurrently. When an airline purchases a floating-price risk hedge, it buys an insurance policy that will protect it against a wildly fluctuating price that either goes very high or very low. An example of this type of swap can be seen in a recent quote for Singapore delivery of JetKero between February and December for US\$57 to US\$90 per barrel. This floating-price risk hedge would cost an airline about US\$16 a barrel.

For reference, the fixed-price risk hedge for 2009 delivery was concurrently US\$69 a barrel at a hedge price of US\$9 a barrel. The US\$57 to US\$90 per barrel floating-price risk hedge states that the strike price for fuel is US\$57 a barrel with unlimited protection at market prices above US\$90 a barrel.

An airline buying this hedge could watch fuel prices carefully and use this hedge to manage its downside and upside risk. For example, if the price of fuel throughout the remainder of the year stays below US\$57 a barrel, the airline would pay the market price plus US\$16 a barrel. This would be a higher price than would be paid for the unexercised fixed-price risk hedge of market price plus US\$9 a barrel. In fact, the floating-price risk hedge would cost more than the fixed-price

risk hedge as long as the market price stays below US\$64 a barrel.

Between a market price of US\$64 and US\$73 a barrel, the floating-price risk hedge becomes more attractive than the fixed-price risk hedge. If the market price of fuel rises even higher than US\$73 a barrel (US\$57 a barrel strike price plus the cost of US\$16 a barrel price of the hedge), the value of both the floating-price risk hedge and the fixed-price risk hedge become very attractive because the airline can sell the valuable fuel future. Because the fixed-price risk hedge costs less than the floating-price risk hedge, however, it is more valuable as the market price increases than the floating-price risk hedge as long as the market price is between US\$78 a barrel and US\$90 a barrel (the US\$69 a barrel strike price plus the US\$9 a barrel price of the hedge).

Should the market price, however, be more than US\$90 a barrel, the floating-price risk hedge becomes much more valuable because it has “unbounded protection” above US\$90 a barrel. This floating-price risk hedge is a more complicated approach to risk management, but it is attractive under the current market conditions of possible high fuel price volatility.

If last year is remembered by airlines as the “year of outrageous fuel prices,” this year may well be remembered by some airlines as the “year we lost our shirts with fuel hedges.”

It is ironic that airlines with the best risk management portfolios last year are suffering from those decisions this year. Early last year, very few economists could have predicted the impact of the credit crunch, worsening liquidity and failing banks that would be the hallmark of the remainder of the year. Despite the bad results of hedging for some airlines during 2009, hedging of fuel, currency, interest rates and carbon credits will gain more momentum in airlines in the future. Airlines will either become more sophisticated at handling these financial instruments or will continue to be adversely affected by financial market volatility.

The future of the airline industry may well be related to the level of sophistication that airlines can gain at financial market engineering from managing these hedges. Hedging isn’t gambling, it is, in fact, a gamble for airlines not to hedge. ■

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