



Point-to-Point[®]

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Implications of the Global Financial and Economic Crisis on Aircraft Financing

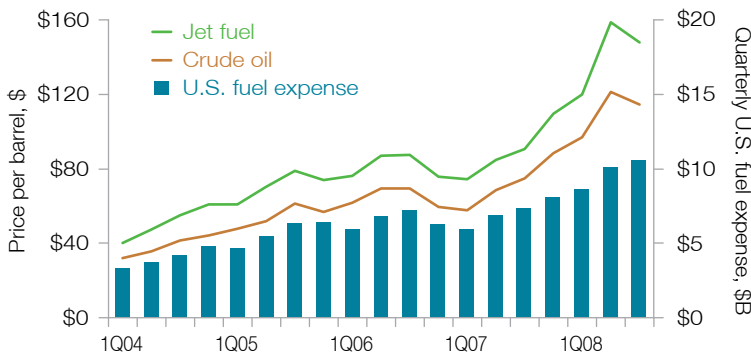
The current global economic crisis struck as oil prices peaked and financial markets reeled under the effects of the subprime mortgage meltdown. Yet the aviation industry has proven remarkably resistant to the serious challenges that have hobbled other sectors during the past 18 months.

The faltering global economy will undoubtedly affect passengers, air carriers, airplane manufacturers, and aircraft financiers. Yet, there is good reason to expect the industry to emerge from this period of uncertainty in a position of strength.

Aviation Market Resilience

Two factors are primarily responsible for the industry's resistance to the ailments afflicting other sectors: Continued strong demand for the new, fuel-efficient aircraft; and the maturity of the aircraft finance industry.

Though oil prices have fallen from their record highs, prices remain volatile. The long-term outlook projects that when economic growth resumes, jet fuel prices will stabilize at a significantly higher level than the accustomed levels before the beginning of the run-up in 2004.



Sources: Brent Crude, Rotterdam Jet Fuel, Form 41. U.S. fuel expense, Air Transport Association.

Airline fuel expenses eased sharply in the fourth quarter of 2008, after peaking at about \$20 billion per quarter in the third quarter. The long-term outlook anticipates oil prices stabilizing at about \$70-\$90 per barrel, still well above the level at which older-generation airplanes can operate at a profit.

The dramatic escalation of fuel costs reinforces the continued strong demand for newer, more fuel-efficient aircraft. Despite the recent easing of oil prices, fuel remains significantly more expensive

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Managing Through Our Challenges

By Walt Skowronski

In comparison to other industries, aviation has been quite fortunate in the face of the current global financial crisis.

A lot of the credit goes to product demand. Even though oil prices have moderated, Boeing and our airline customers recognize that fuel prices have moved to a more expensive plateau, which raises the demand premium for our new, fuel efficient airplanes. At the same time, a geographically diverse customer base has generated a balanced demand distribution, distinguishing the current cycle from all previous ones.



Walt Skowronski,
President of Boeing Capital

Nonetheless, the global economic turmoil has created market conditions that are clearly more challenging than we have seen in many years.

For Boeing, this will likely mean that for the first time in nearly three years, we will provide some customer financing support. We have been taking steps to prepare for this possibility, and the financing levels we foresee appear to be very manageable. Based on our experience and industry facts and data, we are cautiously optimistic for the future.

For the reasons outlined in this edition, we do not subscribe to dire predictions of hundreds of "whittails" piling up outside the production hangars. Nor are we among those who predict tens of billions of dollars in aircraft financing shortfalls. Market pressures will inevitably cause temporary dislocations. However, our approach of carefully tracking the financing for each delivery gives us confidence that what we tell the world is more reliable than what we have heard from various external speculators.

We acknowledge our industry's current challenges and we do not underestimate any one of them. We believe, however, that aviation has a balanced path forward, one that will allow the industry to emerge on the other end of this unprecedented crisis stronger, more efficient and more profitable.

As always, you can look forward to us sharing our research and viewpoint through our ongoing series of financiers and investor outreach events and future editions of Point-to-Point. 2009 will surely be an interesting year. We are pleased that we can accompany you on the journey! ■

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than has been the norm for many years. The additional pressures of economic contraction have weighed disproportionately on older, less efficient aircraft, hitting out-of-production aircraft hardest but, increasing the relative premium for new aircraft. As a consequence, airlines are accelerating fleet renewal plans and reducing capacity by taking older aircraft out of passenger service.

Though not immune to the general economic slowing, new, efficient airplanes have held their value better than many classes of assets, as indicated by the steady activity of leasing companies and record airplane manufacturer backlogs. Though there have been some requests for delivery delays, Boeing has been able to fill vacated delivery spots by working with customers who are in a position to advance their delivery dates.

The aviation finance community's steadfast business focus during the current upheaval reaffirms the high level of maturity demonstrated by the community after the 9-11 attacks. Investors have fixed their sights on the longevity of aircraft investments and stayed in the sector, despite the signs of difficulties in the marketplace.

Boeing pays close attention to each of the aircraft financing market sectors so that we can ensure funding is in place to support timely delivery of our jetliners. We regularly share our research and

world's aircraft financing each year. During the current cycle, a number of new entrants have joined the established lessors and additional financial institutions around the world are looking to enter this market.

Established companies and new entrants alike have been affected by the disruption of financial liquidity. The challenges facing leasing companies are largely those of their parent institutions, not the performance of their aircraft portfolios. A number of major lessors who were well-positioned for the market turbulence are perusing purchase opportunities that turbulence inevitably brings about.

Many have predicted that there will be considerable consolidation in the leasing sector. We guardedly agree, with one important qualification: A year from now, we expect to tally about the same number of lessors as we do today. New players from China, the Mideast, and other regions are eager enter this lucrative business and fill any space vacated by current lessors.

Commercial Banks

In 2008, commercial banks provided about 40% of all aircraft financing. Global bank debt has always been subject to the ebbs and flows of primary and secondary lenders. In the 60s and 70s, U.S. banks were the primary aircraft financiers. In the 80s, Japan's banks became the market makers. When Japan struggled late in the decade, Europe's banks assumed a predominate role which still continues. European banks have come under severe pressure in the current crisis, yet most are staying in the aviation sector and are expected to rebound in 2009. Regional banks are largely niche players, but are emerging as major capital providers to local carriers in selected markets. The next generation of aircraft bank debt is expected to be much more global with Chinese, Middle Eastern and other regional banks joining the established European banks.

Capital Markets

Over the past decade and a half, U.S. capital markets have been the deepest and most efficient aircraft financing markets in the world. However, their lending has been largely confined to U.S. domestic carriers. Key to the strength of U.S. capital markets is section 1110 of the U.S. Bankruptcy Code, which clearly defines the rights of aircraft financiers and owners and the process by which aircraft can be repossessed in case of default. This legal certainty has enabled the creation of Enhanced Equipment Trust Certificates (EETCs), which allow U.S. airlines to enhance their credit rating based on the quality of the assets being financed. The EETC market to date backs roughly \$40 billion of aircraft assets.

In a limited fashion, U.S. capital markets have financed aircraft for non-U.S. airlines by extending credit to leasing companies for blocks of airplanes that are operated by foreign carriers. These foreign lease portfolios were "wrapped"—that is, insured by a monoline or bond insurance company in order to achieve higher bond ratings. The future of this financing method is murky as monolines were key participants in the subprime mortgage market and will need significant reorganization and restructuring. With the departure of the monolines, securitization of non-U.S. airlines dried up. Due to other non-aviation economic drivers, all capital markets are seriously dislocated, and effects of the sub-prime crisis have made the U.S. capital markets too expensive for new issuances in the aviation sector. However, this market has endured deep cyclical

Capital Providers	2003	2004	2005	2006	2007	2008
Leasing Companies*	R/Y	Y	G	G	G	Y/R
Commercial Banks*	R/Y	G	G	G	G	Y/R
U.S. Public Debt* / Capital Markets*	R	R	R/Y	Y	G/Y/G	R
Export Credit Agencies* (like U.S. Ex-Im Bank)	G	G	G	G	G	G/Y
Private Equity / Hedge Funds	G	G	G	G	G	R
Tax Equity Funds, mostly in Europe	R	R	Y	Y	G	G/Y
Airframe and Engine Manufacturers	R	R/Y	G	G	G	Y
New Sources of Funding* (China, Middle East, other emerging markets)	* Key sources of funding				G	G/Y

G Good availability of financing at market prices **Y** Limited financing capacity and rising borrowing costs **R** Temporarily not financing, very limited capacity or high borrowing costs

At year end 2007, industry conditions were largely satisfactory (green). Any concern (yellow) was limited to the public debt and U.S. capital markets. Conditions held steady through February 2008, though concern was rising among commercial banks, private equity sources and hedge funds. Since then, the credit crunch has made commercial lending more expensive. Public debt/capital markets and private equity/hedge fund sources have further degraded (red). However, the increasingly global aircraft financing market sparks cautious optimism for near- to medium-term aircraft financing availability.

analysis with the industry.

Aircraft Leasing Companies

Leasing companies typically account for 20% to 30% of the

downturns in the past and we fully expect it to recover, with 2010 as the most likely timeframe at this juncture.

Building on U.S. capital market structuring capabilities, Boeing is working with financiers worldwide to create international EETC structures made possible by Cape Town Treaty ratification.

Export Credit Agencies

National export credit agencies (ECAs) like The Export-Import Bank of the United States (Ex-Im Bank) have been valuable resources for the aircraft finance market. Ex-Im has consistently financed around 20% of Boeing deliveries and has been a stable presence in the sector. European ECAs have done about the same percentage for Airbus. In the aftermath of 9-11, the Ex-Im Bank was a major help to the industry. Now, as then, Ex-Im recognizes the industry's challenges and is prepared to step up again.

A tribute to the structuring expertise and experience of the Ex-Im's aircraft finance team, the Ex-Im Bank has supported financing for more than 600 aircraft in the past decade, generating more than a billion dollars in fees for the U.S. Treasury—without any losses.

Boeing's backlog is globally diverse and the majority of our deliveries are eligible for Ex-Im financing. Despite projected record deliveries next year, Ex-Im is again expected to sustain its share of support for U.S. exporters.

Hedge funds and private equity

Hedge funds and private equity have been important players, post 9-11, providing significant liquidity through the market for EETC bonds backed by commercial airline assets. The returns generated in the secondary EETC market spurred fund managers to venture into other aircraft financing opportunities, including direct junior debt lending and leasing company portfolio acquisitions. Hedge fund activity in the aviation sector has been significantly curtailed recently as access to capital and leverage has become restricted. Given the minor role hedge funds play in new delivery financing, their current inactivity should not have an effect on aircraft financing in the near- or mid-term.

Tax Equity Markets

The relatively small cross-border tax equity market is stable and available to enhance the efficiency of financing, primarily for airlines with higher credit ratings. Japanese operating lease markets are a small, but robust market. French, Spanish, UK, and Swedish tax lease markets also provide some aircraft financing, though the entire sector is experiencing the effects of declining bank profitability.

Airframe and Engine Manufacturers

Boeing has not needed to do any direct financing for almost three years, thanks to strong support by third-party sources. Recently however, both major airframers have indicated that some manufacturer financing may be necessary to help customers with market access issues. We believe that the levels of financing we are likely to see appear manageable.

New Sources of Financing

This sector comprises two major regions – China and the Middle East – and numerous regional bank markets and sovereign wealth funds. Today, the aggregate of funding supplied by regional banks accounts for a substantial portion of total delivery financing. In China, for example, banks have been funding a significant share of

the aircraft entering the country, and they are increasingly looking for opportunities outside China. Similarly, the Middle East is developing a network of global lessors and has been funding some regional deliveries. At the same time, sovereign wealth funds are on par with today's well-established mutual fund companies, most having professional management. They are candidates to become an important aircraft capital funding source for EETC structures and lessor equity.

Going forward

Current conditions are clearly more challenging than those of the past several years of record orders and abundant liquidity. But there are reassuring market indicators as well. Aircraft were the last class of assets to feel the effects of the crisis of confidence and loss of liquidity. We expect that aircraft will be among the first asset classes to benefit from capital returning to market.

The pressures weighing on the various aircraft funding sources will inevitably cause temporary market dislocations. Boeing may find it necessary to provide temporary or permanent customer financing.

We also do not subscribe to predictions of hundreds of "white tail" accumulating on manufacturer doorsteps. The industry's most serious experience in that regard were the two dozen leased A320s that were orphaned by Braniff's bankruptcy and sat idle for months before eventually going to America West in the early 90s. Both Boeing and Airbus have achieved dramatic improvements in lead times and demand management since that era, and there is no basis in reality for such a prediction.

Nor do we see any merit in speculative visions of tens of billions of dollars of aircraft financing shortfalls. We analyze each planned delivery of ours to understand the funding risk. This bottom-up approach includes all sources of aircraft capital and reinforces our confidence in the information reported in this article as opposed to pundits' views.

In summary, while we do not underestimate the challenges of higher oil prices, economic contraction, the financial crisis and continued environmental regulatory pressures, we believe that aviation has a path forward that will carry it through this unprecedented time and the industry will emerge stronger, more efficient and more profitable. ■



Next-Gen at 5,000th Order – The Boeing Next-Generation 737 family, which in November celebrated the fifteenth anniversary of its launch, reached the 5,000-order milestone more quickly than any other commercial jetliner as the result of a recent order.

Noteworthy Developments

Boeing, China banks to work together to expand financing involvement

Boeing has agreed with four of China's leading banks to work together to expand the country's involvement in aircraft financing both within China and elsewhere in the world. BCC President Walt Skowronski led a delegation to Beijing in mid-November to meet with officials from the Bank of China, the Industrial and Commercial Bank of China, China Development Bank and the Export-Import Bank of China.

"China is currently the fastest-growing aviation market in the world, and Chinese banks are taking on an increasingly important role in supporting aviation's unparalleled growth here," said Skowronski.

The BCC executives also joined with more than 40 government, banking and leasing officials in the first "reunion" of participants in the Boeing-China Leasing Seminar program that began in 2005.



Leasing Class Reunion – BCC President Walt Skowronski and Chairman Liu Mingkang of the China Banking and Regulatory Commission at the mid-November "reunion" for the Boeing/China Leasing Seminar.

Fall conferences find investor interest in Asia and Middle East

Boeing Capital concluded its 2008 Financiers and Investors conference series with record crowds at events in the Asia Pacific and Middle East regions, a good indicator of investor interest, despite the global economic unrest. The Hong Kong event attracted more than 90 financiers. "In addition to our traditional banks, the Chinese bank and leasing company participation was significantly more noticeable, reflecting the growing importance of the Chinese banking and leasing sector to the aviation industry," said Foster Arata, BCC vice president and managing director for Asia Pacific and Greater China. BCC's Middle East event two weeks before in Dubai yielded similar investor reaction. It attracted approximately 80 participants, twice the size of the first event there in 2005. "Investors who have capital available and are willing to enter the airplane financing market will find much less competition now," said John Matthews, BCC managing director for the Middle East and Africa. "Investors can take advantage of short-term financial market dislocations to enhance the returns of their longer-term airplane portfolios." Matthews also shared BCC's view that aircraft, as high-value assets, are ideal for Islamic financing where terms are governed by Shariah (or Islamic) laws.



Dubai in October – John Matthews (left, above), managing director for Middle East and Africa, talks about opportunities for both conventional and Islamic financiers at the Middle East event on October 15.



Hong Kong in November – Foster Arata (right, above), Boeing Capital Corporation vice president, welcomes guests at the Asia Pacific F&I event on November 5.

Boeing hosts annual appraisers forum

Boeing Capital held its fifth annual appraisers forum in Seattle this fall. The session set attendance records and included 90 percent of the industry's certified airplane appraisers, along with leading bank analysts covering the airplane financing sector.

"There was some concerned conversation at times given the economy but also the ability for the appraisers to talk with the bankers and us in real-time about how we see the market potential," said Joe Ozimek, BCC managing director for aircraft programs and valuations.

Evaluating the collection – The 40-plus leading aircraft appraisers who attended this year's Boeing Appraisers Forum pose for a class photo while touring Paul Allan's Heritage Collection of vintage military aircraft.



Please direct questions or feedback to the following:

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