FRBSF WEEKLY LETTER

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Commercial Aerospace: Risks and Prospects

Introduction

The economic downturn in aerospace has raised concern about the economic prospects of regions in the Twelfth District that rely on this industry. The severity of the recession in southern California, for example, has been blamed in part on cutbacks in defense-related aerospace. An even greater regional dependence on aerospace in general (and one company in particular) is seen in Washington, where Boeing Corporation employs over 100,000 workers. Overall, aerospace employment accounts for 5.2 percent of total employment in Washington. In contrast, the industry accounts for 1.6 percent of employment in California, and only 0.7 percent of national employment.

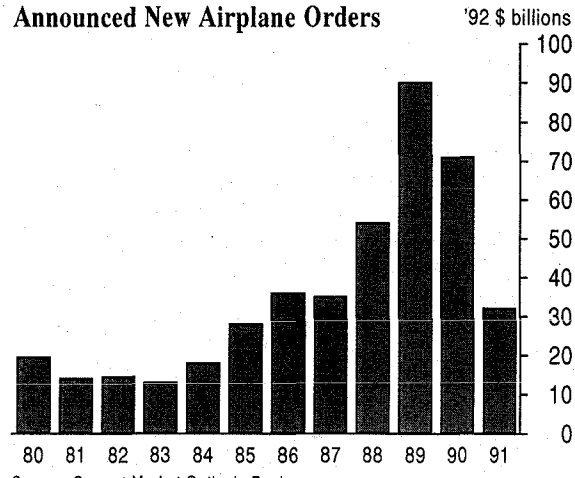
Recently announced production cutbacks and layoffs have raised concerns for the economic outlook of these regions. This *Letter* reviews the prospects for aerospace and suggests that despite short-term economic stress, long-term prospects for commercial aerospace are good. The current slowdown in orders comes from a high base, and a substantial backlog of orders remains—particularly for Boeing. Moreover, despite sluggish demand from U.S. carriers, demand from international carriers—particularly in the Asia-Pacific region—remains stable and is projected to support U.S. commercial aircraft production into the next century.

Recent developments and short-run prospects

In the last decade the aerospace industry saw an unprecedented surge in orders, production, and delivery of airplanes (Chart 1), which peaked in 1989. The major producers all benefited from this surge in orders for commercial aircraft, with Boeing's share remaining well over half of total world orders during this period and the rest split between McDonnell Douglas and Airbus, a European consortium. The strength in demand for commercial aircraft reflected the steady growth in air travel during the past decade. Airline passenger trips worldwide grew from 766 million in 1982 to 1.164 billion in 1990, with yearly growth rates varying from 4 to 7 percent.

Chart 1

Announced New Airplane Orders



Source: Current Market Outlook, Boeing.

Since 1990, however, recessions in the U.S. and elsewhere, together with the Persian Gulf crisis, led to a slump in air travel. Overall, traffic declined by 3 percent in 1991 to 1.125 billion trips, the first annual decline in the jet era. The slump in air travel has affected U.S. aerospace manufacturers through cancellations of orders and extensions of deliveries, particularly for transports with fewer than 150 seats. Boeing reports the world total of net new orders at $32 billion in 1991, down from $71 billion in 1990.

In 1992, further cutbacks in orders and extensions of deliveries have been announced. In February, losses at UAL (United Airlines' parent corporation) prompted management to cut $6.7 billion from its capital spending plan through 1995. (This followed the pattern set by American Airlines in November 1991; it stretched out aircraft orders and decided not to exercise its option to purchase 93 transports in order to save approximately $5.2 billion.) On April 29, 1992, Delta Airlines announced it was beginning to scale back capital spending plans by $5 billion over the next decade, and it will eliminate more than 100 aircraft it had planned to acquire through 2001.

U.S. manufacturers began to respond to this slowdown in orders last year. Boeing slowed the flow of parts from about 1,700 suppliers for the 737 and announced it would reduce the production rate for the plane from 21 per month to 17, effective at the end of September this year. On January 31 of this year, the company said it planned to cut the rate further—to 14 per month—by October. In addition to weakening civilian demand, Boeing has been affected by defense cutbacks. It expects to cut its B-2 workforce and has been affected by the cancellation of three strategic missile programs.

Reflecting these developments, Boeing has announced job cutbacks of 6,500 this year for its operations in the state of Washington through layoffs and attrition. The job losses are approximately evenly distributed between defense and nondefense. An additional 1,500-plus job losses are projected for Boeing operations in Wichita, Kansas, raising the announced cutbacks to over 8,000 nationwide.

McDonnell Douglas operations in southern California have been harder hit, in part due to a greater reliance on defense and a smaller market share for commercial aircraft. In the past five business quarters, McDonnell has had a net loss of 35 aircraft orders. In response to this loss (as well as to defense cutbacks) McDonnell has laid off about 15,000 workers in Long Beach, where it manufactures the MD-80 and the MD-11, reducing total employment there to 30,500. In early June, the company announced it will close its Torrance aircraft parts manufacturing plant in 1993 and eliminate 2,000 jobs.

The recent news for U.S. commercial aerospace, however, is not all unfavorable. In the first quarter of 1992, Boeing delivered a record 127 aircraft. These deliveries, of course, reflect orders placed in 1990 and earlier. Orders through the first quarter of this year (56 transports), however, have continued at a pace that would about equal last year's total (257 transports), in part reflecting continued demand seen for the 777 from the Asia-Pacific region. While these new orders are modest compared with recent years, Boeing's backlog of firm orders for the first quarter was reported at $95.8 billion, down slightly from $97.9 billion at the end of 1991, and a record $109.7 billion (in 1992 dollars) in 1990. Total world backlog at the end of 1991 stood at $190.7 billion. How "firm" this backlog of orders really is, of course, depends on the longer-run demand for aircraft.

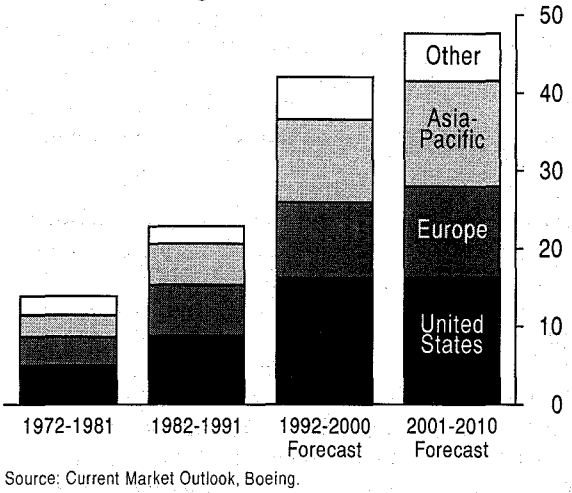
Long-run forecast

While the short-run outlook contains significant economic stress, long-run prospects for U.S. commercial aerospace manufacturers are more favorable. Industry forecasts show significant increases in the worldwide demand for air travel. Boeing has forecast a 5.2 percent annual growth rate through 2010 for non-U.S. airlines in its latest market outlook. McDonnell Douglas is even more optimistic, forecasting a 6.5 percent growth rate. While the forecast for growth for U.S. carriers' domestic routes is slightly less, at a 4.5 percent rate, reflecting a more mature market, the international operations of U.S. carriers are forecast to grow at a 5 to 5.5 percent rate.

Forecasts of aircraft orders needed to meet this world demand for air travel are similarly optimistic. Boeing is projecting that net new orders worldwide will average $42.2 billion per year between 1992 and 2000 (in 1992 constant dollars), and for the following decade, $47.7 billion per year (Chart 2). In contrast, during 1982-91, the value of aircraft deliveries averaged $23 billion per year, and during the previous decade, $14.0 billion.

Chart 2

Worldwide Average Annual Deliveries '92 $ billions



Source: Current Market Outlook, Boeing.

A sizeable part of that expected demand arises from aircraft retirements. Boeing forecasts 2,750 transports being retired by the end of the decade,

and more than 4,200 by 2010, with their replacement accounting for 27 percent of total deliveries. Reasons for retirement include compliance with noise rules and the aging of aircraft from the 1960s delivery surge. (While official retirements last year totaled only 91, many grounded aircraft from failed carriers are mothballed and for various reasons are unlikely to fly again.)

In addition to demand due to replacement, industry analysts are forecasting a strong demand for fuel-efficient wide-body transports, particularly to service a growing volume of air travel in the Asia-Pacific region. For example, *Aviation Week and Space Technology* recently wrote that the opening of new destinations and Pacific Basin airports with vast increases in capacity will make the region the major source of aviation growth for the next twenty years. By the year 2010, routes within and to the Asia-Pacific region are forecast by McDonnell Douglas to constitute 2.57 trillion revenue passenger kilometers (RPKs), or 65 percent of worldwide total RPKs. This compares with the region's 49 percent share of a total 884 billion worldwide RPKs in 1990. Boeing forecasts that the dollar volume of deliveries to the Asia-Pacific region will grow from a $5.3 billion annual average during the 1982–1991 period to a $10.7 billion average for 1992–2000 and $13.6 billion for 2001–2010.

As a result of this projected demand, both Boeing and McDonnell Douglas are tailoring their new aircraft offerings to customer needs for fuel-efficient wide-body aircraft in the Asia-Pacific region. Boeing is consulting with potential customers on various upgrades of its 747 model, while McDonnell Douglas has proposed a prototype wide-body that is significantly larger than the current 747.

In the near-term, demand from the Asia-Pacific region is supporting prospects for the success of the fuel-efficient Boeing 777 scheduled for delivery in 1995, and as a result, for a continued high level of commercial aerospace production in Washington. Engineering activity on the 777 has peaked, and the buildup of the workforce—currently at 6,000—is shifting toward operations. At the Everett, Washington facility, now the final assembly site for the 747 and 767, construction is in progress to increase capacity by more than 50 percent to accommodate the 777. With the completed expansion, the facility will be capable of producing 21 transports per month. Currently, the 747 and 767 are being built at a rate of five per month *each* at the Everett facility. In sum, even with the decline in 737 production, Boeing will be producing 32.5 planes per month in late 1992—a level of production that will support a high level of economic activity throughout the region.

Conclusion

For better or worse, the health of commercial aerospace will affect the economic prosperity of important regions in the Twelfth District for the near term. Betting on one company or industry is always riskier than relying on a diversified set of firms, and current short-run cyclical stress in aerospace-dependent regions illustrates the risks of dependence on this industry.

Longer-run risks also exist. U.S. airlines continue to exhibit weakness, and a more concentrated industry may result in more modest expansion plans. Investment in high-speed rail in Europe and the U.S. represent another long-term threat to air transportation. Furthermore, business travel may become less important in the future. During the Gulf War, increased use of telephones, facsimile machines, and video conferences replaced lost business trips. Such advances in telecommunications and high-speed rail may cut into air travel in the long run.

If industry forecasts of world-wide demand hold true, however, prospects for commercial aerospace are favorable. The demand for new fuel-efficient aircraft in regions such as Asia-Pacific, and replacement of existing fleet, should continue to support U.S. aerospace manufacturers and regional economies dependent on commercial aerospace.

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