

Will Recovering Passenger Numbers Improve Airports' Bottom Line?

By Julian P. Andrews

The last few years have not been easy on airports' income statements. Significant declines in passenger numbers have put pressure on airport revenues, while airports find themselves facing greater competition for a decreasing amount of airline service. However, as we approach the end of 2003 there is some light at the end of the tunnel. The Air Transport Association reports that airline yields are recovering and showing year-on-year improvements and domestic passenger enplanements are up over last year, although still below 2001 levels.

What will this mean for airports' operating income? Will increases in passenger traffic flow through to airports in terms of increased non-aeronautical revenues, or will it mean increased operating expenditures as they gear up to serve an increasing number of passengers? In this Measure of the Month, we attempt to answer these questions by looking at the historical relationship between passenger numbers and some key drivers of airport financial performance.

Passenger Traffic and Operating Income

Two and a half years ago in this column, we addressed the question of whether

increasing passenger traffic was related to improved airport financial performance ("Is Bigger Really Better?" *AM*, March/April 2001). We argued that, as many operating costs—utilities, personnel, maintenance and repair, etc.—are fixed in the short term and revenues such as retail sales, food and beverage and parking will vary directly with passenger traffic, one would expect that increasing traffic should lead to increasing operating income in the short term. At that time we found some evidence that increased passenger levels were associated with improved operating income (defined as gross revenues minus operating expenses, not including debt service or other financing costs), although the evidence was not uniform and indeed, that certain diseconomies of scale were evident at large hub airports. In this discussion, we draw on more recent data to revisit this question with a particular focus on how changes in passenger levels relate to changes in key components of non-aeronautical revenues and operating expenses.

Airports are unique in their particular combination of concession agreements, cost structures, level of service and revenue sources. Therefore, we sought to

measure the relationship between passenger traffic and operating income as accurately as possible by looking at these changes at the level of individual airports. Drawing on three years of data obtained from the 2000-2001, 2001-2002 and 2002-2003 AAE Rates and Charges Surveys, we identified 112 paired data points for which information was available for consecutive years (29 large hubs, 22 medium hubs and 61 small hub airports). For each, we calculated the annual percentage change in enplaned passengers (EPAX) and the corresponding annual percentage changes in non-airline revenue and operating expenses (OPEX). These values are plotted on Figures (Figs.) 1A, 1B and 1C.

Operating Expenses

The current data is clear in supporting the hypothesized relationship between OPEX and EPAX. OPEX consistently increased at large, medium and small hub airports independently of the changes in passenger traffic experienced in the survey period, most notably in the 2001-2002 period when passenger levels declined significantly. Regression analysis of the data found no significant relationships between these variables at the

Fig. 1A LARGE HUB AIRPORTS

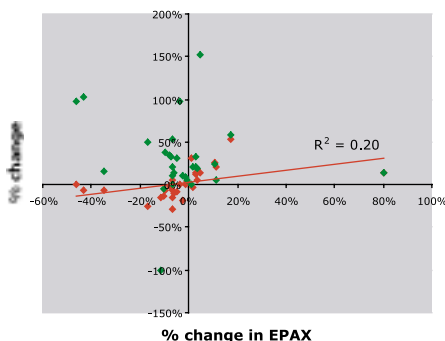


Fig. 1B MEDIUM HUB AIRPORTS

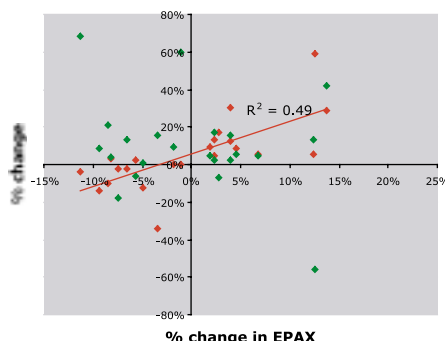
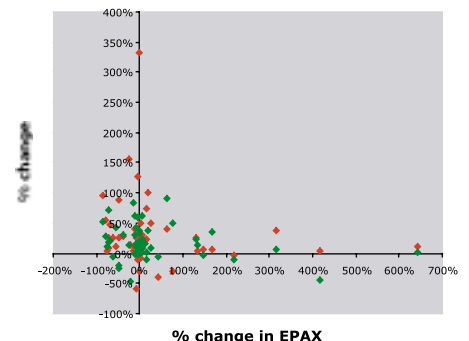


Fig. 1C SMALL HUB AIRPORTS



◆ Revenue ◆ OPEX — Linear (Revenue)

◆ Revenue ◆ OPEX — Linear (Revenue)

◆ Revenue ◆ OPEX

0.05 level (i.e. the level at the which the likelihood of an observed relationship being due to chance rather than an actual link is less than 1 in 20).

It is interesting to note the small hub data does show a weak, but not statistically significant, negative relationship between changes in operating expenses and passenger traffic, suggesting that small hub airports that have been able to reduce operating expenses have been successful at maintaining and increasing passenger numbers, whereas those that have not reduced costs have faced declining passenger traffic. The fact that this relationship does not hold for large and medium hub airports may result from the nature of competition at small hubs. Cost per enplaned passenger can be a more important determinant of the level of airline service at small hubs than at large and medium hubs where strategic market considerations and congestion costs may dominate carriers' decision process. Further, increased service from low fare carriers, whose scheduling is driven in large part by cost considerations, will have a proportionally greater effect on changes in passenger traffic at small hubs.

Non-Airline Revenue

Inspection of Figs. 1A and 1B suggests the data may also support the assertion that non-airline revenues are positively related to traffic levels. These relationships were tested statistically by comparing the annual percentage change in EPAX with the annual percentage change in non-airline revenues using simple linear regression. Significant relationships were found for both the large hub sample ($R^2 = 0.20$)¹ and the medium hub sample ($R^2 = 0.49$), as shown on Figure 1A and 1B respectively. That is, in these data sets, an increase or decrease in passenger numbers was associated with a similar increase or decrease in non-airline revenue. No significant relationship was found for the sample including small hub airports.

To explore these relationships further, a number of components of revenue were examined individually: parking, retail, ground transportation (including revenues from rental car, taxi, limousine and shuttle bus operations), food and beverage, and duty free revenues. As before, the annual percentage change in each of these variables was calculated for each large and medium hub airport in the sam-

ple and this value regressed against annual percentage change in enplaned passengers. The results of these analyses are shown in Fig. 2.

FIG. 2: NON-AIRLINE REVENUE COMPONENT ELASTICITY

	R2	p	x1 Coefficient
PARKING	0.28	< 0.001	0.58
RETAIL	-	NS ²	-
GROUND TRANSPORTATION	0.07	< 0.05	0.39
FOOD & BEVERAGE	0.09	< 0.05	0.41
DUTY FREE	-	NS ²	-

As one might expect, there is a significant positive relationship between both parking and ground transportation revenues and passenger traffic. In the current data set, each percentage point increase in passenger traffic was accompanied by an increase in parking revenue of 0.58 percent and an increase in ground transportation revenue of 0.39 percent. Similarly, food and beverage revenues increased 0.41 percent for each percentage point increase in traffic.


Although statistically significant, the magnitude of these relationships is lower than conventional wisdom may have suggested. Additional data and analysis is required to determine why this is, although two possible explanations come to mind. First, it may be the result of a disproportionate increase in transit passengers over origin and destination (O&D) traffic, as transit passengers will not add to parking or transportation revenue. Second, it may reflect a diminishing return per passenger as each additional passenger spends less as airport congestion increases.

Conversely, our analysis found no significant relationship between either retail or duty free revenues and passenger traffic. This may be due to the short-term nature of the data used. Retail and duty free concession leases are typically fixed over a number of years; any adjustments for changes in traffic levels are typically negotiated when the lease is renewed. Second, many airports incorporate minimum annual guarantees (MAGs) into these retail concessions leases. This data includes the years 2000 to 2002, a period in which a significant decline in passenger travel was experienced by

most airports. In this situation, a MAG may have provided a floor on lease payments, effectively masking any relationship between revenue and traffic.

Operating income is one of many factors that influence an airport's financial performance. Due to the unique nature of the business, it is not as critical to financial survival as in other industries. However, improvement in operating income may provide an airport valuable additional capacity to fund needed capital improvement or reduce airline costs to attract or retain service. The data presented in this column suggest that the predicted recovery in passenger numbers should provide this boost to the bottom line through improvements in non-airline operating revenue. However, it also shows opportunities for additional improvements exist.

Although survey data suggests that operating expenses are largely independent of passenger numbers, it does show that during the period studied increases in operating expenses were significant (between 15 percent and 30 percent per year) and considerably larger than might be accounted for by CPI and other cost of business increases. Clearly, there have been some significant ratcheting of insurance and security-related costs in the past two years; airports must take advantage of passenger growth to increase revenues to offset these additional costs.

As passenger numbers begin to recover, airports should experience increases in non-airline revenue. Fully exploiting these opportunities means paying more attention to less closely watched revenue sources such as retail to attempt to increase the average spend per customer. Finally, airports may wish to consider incentivizing retail and concession contracts by lowering MAGs and tying rents more closely to receipts. 

How does this experience compare to your airport? If you would like to share your ideas and information, please e-mail jandrews@img-group.com.

Infrastructure Management Group (IMG) is a family of U.S. companies providing management consulting, investment banking, development and technology services to airports and other infrastructure industries.

¹ An R^2 value of 0.20 implies that 20% of the variation in the dependent variable (i.e. non-airline revenue) can be explained by variance in the independent variable (i.e. enplaned passengers).

² No significant relationship was observed.