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# Understanding the Demand for Air Travel: How to Compete More Effectively

## Meeting the New Challenges of the Airline Industry



**T**his report is the first in a series on the airline industry produced by The Boston Consulting Group's travel and tourism practice. Upcoming topics will include the impact of China and India on long-haul travel, the rise of Middle Eastern carriers, and the role of the megahub in future airline traffic flows.

Two rules of thumb often cited throughout the airline industry are “Demand for air travel grows twice as fast as gross domestic product” and “Airline yields always drop over time.” Both statements are at least partly true. Yet few industry participants stop to think about how fundamentally intertwined they are.

Individual airlines, as well as the industry as a whole, suffer when care is not taken with demand forecasting. The challenge lies in distinguishing between growth in *underlying demand* and growth in *induced demand*. Excess capacity beyond underlying demand will lead to declining yields as airlines lower prices in order to induce demand for seats that would otherwise go empty. Therefore, airline

managers must be rigorous in calibrating their growth plans to the outlook for underlying—rather than induced—demand.

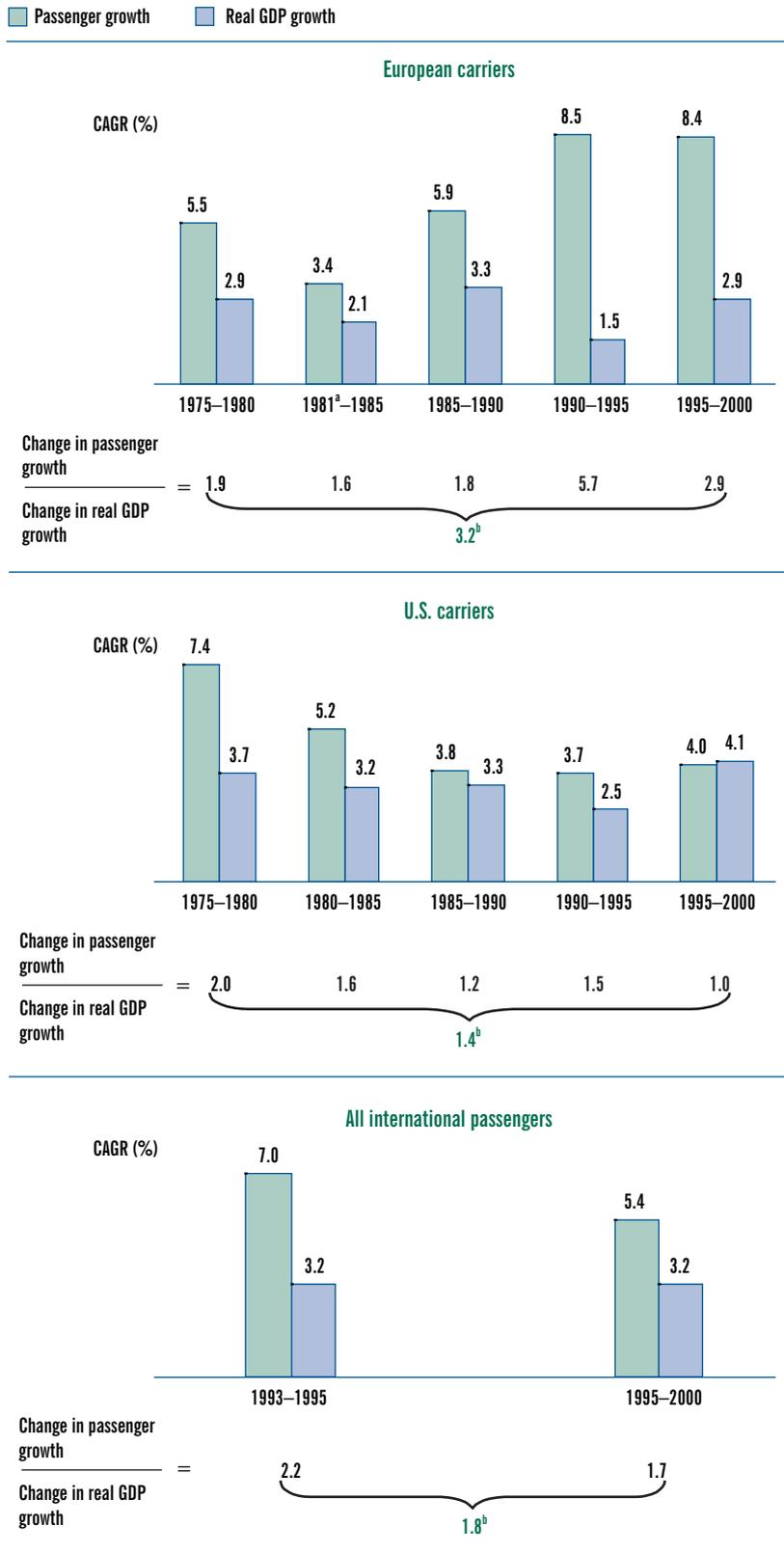
When individual airlines seek to understand true underlying demand, they improve their competitiveness by exposing threats and opportunities that could easily escape their notice. A better understanding of demand can also improve economic outcomes for the industry as a whole by eliminating a factor that contributes to industry overcapacity.

### Understanding Historical Growth Rates

Historical growth rates for the airline industry indicate that demand for air travel does indeed grow at a multiple of GDP growth. Rates of approximately 1.5 to 2 times GDP growth are common. (See Exhibit 1, page 2.) However, managers often make the mistake of extrapolating forward from historical growth rates (sometimes expressed in percentage growth terms but usually as a multiple of GDP growth) as their starting point when considering future growth plans.

EXHIBIT 1

DEMAND FOR AIR TRAVEL TENDS TO GROW AT A MULTIPLE OF GDP GROWTH



SOURCE: BCG analysis.

NOTE: Demand numbers are rounded.

<sup>a</sup>Comparison data for 1980 and 1981 are incomplete.

<sup>b</sup>Demand growth for the period as a whole, as a multiple of GDP growth.

In fact, the historical rate is the sum of two very different types of demand growth: underlying growth, which occurs naturally over time and is driven by factors external to the industry, and induced growth, which occurs as a response to decisions and actions that airlines have taken over time. Extrapolating forward from underlying demand makes sense. But extrapolating forward from induced demand only sets up a repetition of mistakes that the industry has made in the past—and potentially compounds them for the future.

Underlying Demand Growth

We define underlying demand growth as the increase in demand that will occur in the future at current real-price levels. Such growth can be driven by a number of factors, but the major ones are increases in population, income, and trade, as well as changes in taste. Airlines can estimate underlying demand growth at the route, country, or regional level. For instance, The Boston Consulting Group recently studied global demand for long-haul flying and found that there is a strong and predictable relationship between the number of long-haul flights and the level of income per capita. The S curve effect shown in Exhibit 2 reflects the fact that the purchase of air travel comes out of disposable income.

Demand for long-haul travel is nonexistent or very low at subsistence income levels but ratchets up as income grows. At very high levels of disposable income, demand for air travel could conceivably reach a point where it

“caps out”; but judging from the available evidence, that point hasn’t been reached yet for long-haul trips.<sup>1</sup>

In many outbound markets for long-haul travel in which GDP per capita is less than the curve’s inflection point of U.S.\$15,000, the rate of underlying demand growth is therefore less than the rate of GDP growth. If we consider the global long-haul market as a whole, the combined weighted impact of the S curve effect across countries indicates that underlying demand growth for long-haul flying is currently about 1.2 times GDP growth. That number is significantly lower than the 1.8 times GDP growth observed in the market

throughout the 1990s. It is also much lower than the rule of thumb of 1.5 to 2 times GDP growth that forecasters typically refer to when they talk about future growth potential.

### Induced Demand Growth

The missing link between observed historical rates of demand growth and underlying demand growth is induced growth. Induced growth arises whenever airlines choose—wittingly or not—to increase a market’s capacity beyond underlying demand growth.<sup>2</sup> Once excess capacity enters the market, airlines often conclude that the economics of filling those extra seats with discount tickets are better

than the economics of allowing the seats to go empty. So they lower prices—or, more commonly, offer additional discounted seats to the market—and consumers are induced to travel on more occasions than they otherwise would have. The number of passengers (or demand) in-

1. The implications of this relationship for future demand growth in both developing and developed countries are covered in an upcoming BCG Focus on the impact of China and India on long-haul travel.
2. Induced demand is to be distinguished from stimulated demand. Although both involve introducing new capacity and reducing prices to create new demand, stimulated demand is the result of a conscious decision by an individual airline. Induced demand is more an outcome of industry dynamics, attributable to the industry as a whole, and is rarely the result of a conscious decision.

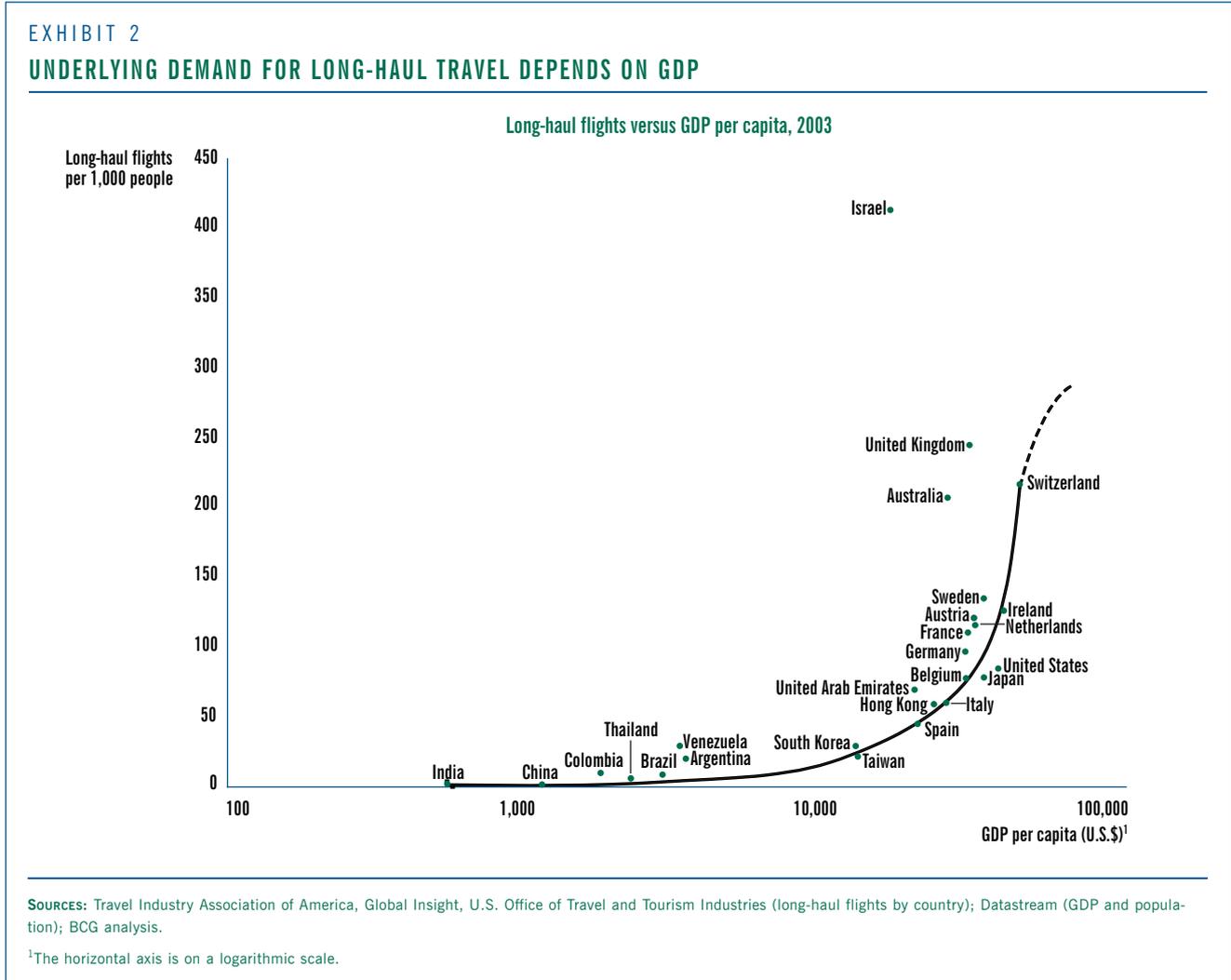
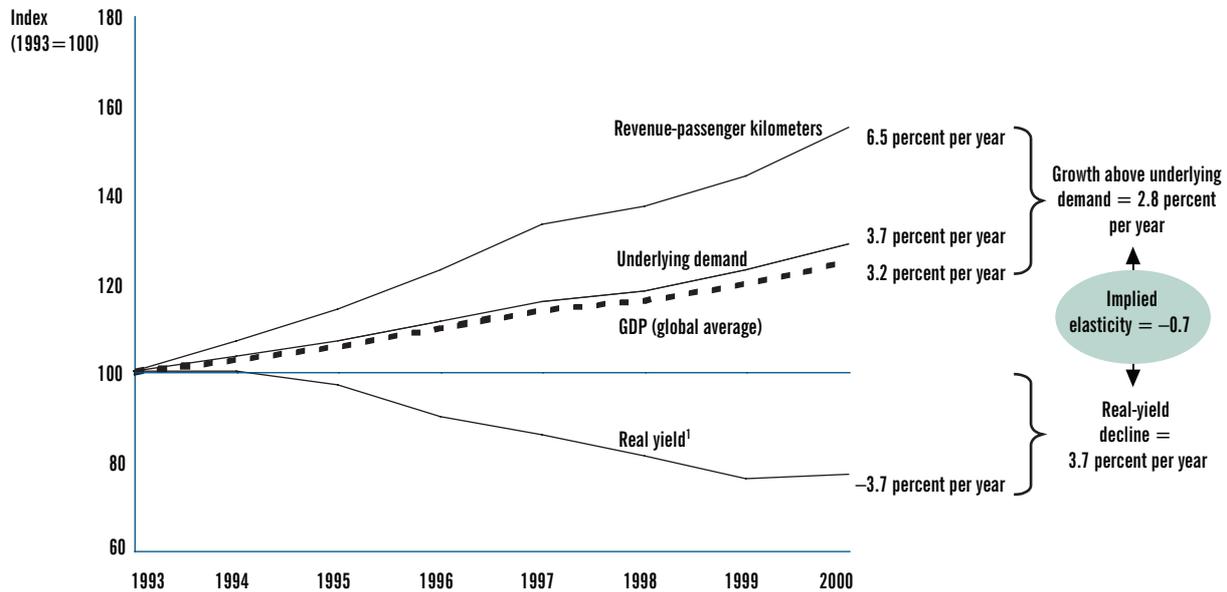


EXHIBIT 3

GROWTH ABOVE UNDERLYING DEMAND LEADS TO YIELD DECLINE

Long-haul passengers and yield estimates, 1993–2000



SOURCES: International Air Transport Association; BCG analysis.

<sup>1</sup>Estimate based on routes between Europe and Asia, Asia and North America, and North America and Europe.

creases to fill the excess capacity, but at a lower overall price.

Just how far prices have to fall to fill those extra seats (the price elasticity) depends on individual market characteristics. In long-haul flying throughout the 1990s, underlying demand growth was approximately 3.7 percent per year, but airlines increased the number of seats they were willing to fill by 6.5 percent.<sup>3</sup> (See Exhibit 3.) To induce the additional 2.8 percent of demand, real yields had to fall. When we look at how far real yields fell over this period (3.7 percent per year), we can see that for the long-haul market as a whole, prices had to fall about 1.4 percent to fill each 1 percent of excess capacity.<sup>4</sup> Expressed another way, the implied overall price elasticity of the long-haul market was a bit more than -0.7.<sup>5</sup>

A Problem of Industry Dynamics

Induced growth is not always bad for the industry. When demand elasticity is very high, for instance, the benefits from the additional volume may outweigh the drag of lower prices, especially if cost levels are low compared with current yields.

But in most cases, the price reductions necessitated by excess capacity are painful for the industry. With the vast majority of carriers either unprofitable or failing to earn cost-of-capital returns, falling prices almost always mean deteriorating economics.

So why does the industry continue to grow beyond the rate at which its economics can be optimized? The primary causes of excess capacity relate to the

industry’s problematic dynamics and are well documented: easy access to capital, high barriers to exit, and state-owned carriers that don’t always see shareholder value as the major driver of decisions. But consider another possible cause: the industry’s susceptibility to groupthink when

3. The 1990s were the most recent period of sustained “normal” activity in most airline markets. Because of the impact of the terrorist attacks of September 11 and the international outbreak of severe acute respiratory syndrome (SARS), the period 2000–2004 cannot be taken as representative of underlying consumer attitudes and patterns.

4. Nominal yields fell by 1 percent annually during this period.

5. Price elasticity equals the percentage change in demand divided by the percentage change in price. It should be noted that the elasticity for any specific long-haul market or route will be greater than for the long-haul market overall because of the substitution of one route for another that can occur when the price on one route is lowered while the prices on others are held constant.

predicting growth in demand. The lack of a clear distinction between historical and underlying demand growth, and the tendency to unquestioningly extrapolate from historical growth relationships, mean that in many cases *all* competitors begin planning their fleet and capacity growth from a starting position that already factors in a certain level of overcapacity.

### How to Compete More Effectively

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It is one thing to say that the airline industry as a whole would be better off if all airlines were more mindful of the distinction between underlying and induced demand when planning capacity growth. But what about an individual airline that is operating in an environment where competitors are adding capacity with seeming disregard for the impact it will have on price and economics? Is the distinction between underlying and induced demand still useful for such an airline?

The answer is yes. Understanding the distinction may not keep the situation from occurring (although clear signals—such as public statements that explicitly relate an airline’s demand forecasts and capacity decisions to underlying demand—can help). But an appreciation of the difference between the two types of demand can allow an airline to deal with the capacity problem in the best possible way. For instance, an airline that has a more accurate understanding of underlying demand will be better able to predict future yields and economics for each of its routes. Such information is crucial to the

key strategic question of *where* it should choose to compete. Once an airline takes into account a more accurate picture of the likely degradation in yields on a route-by-route basis, the relative economics of the routes in its portfolio may change substantially. Airlines with a better

*With a better understanding of underlying demand, airlines can make wiser decisions about how to compete.*

understanding of the underlying demand characteristics of their routes will be more careful about where they play the “maintain share” game, rather than keeping to a blanket goal of maintaining share on all routes.

With a better understanding of underlying demand, airlines can also make wiser decisions about *how* to compete.

For example, additional induced demand often consists of predominantly low-yield leisure demand, which means that the overall passenger mix of the route will start to skew toward leisure travelers. A yield-focused airline that believed a route was on the cusp of changing from a small business-dominated route to a more mixed business-and-leisure route might begin to focus on smaller aircraft with more frequent departures (favored by business travelers). That decision would leave the carrier’s competitor with a larger overall share but a significantly disadvantaged revenue

mix consisting of more leisure travelers. In that case, the *quality* of share rather than the *quantity* of share would be the basis for competitive advantage.

### A Checklist for Getting Started

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Individual airlines that invest in a better understanding of the true drivers of demand will be able to plan more effectively and identify more opportunities to gain competitive advantage. This is as true for macro-level planning, involving long-term capacity and fleet numbers, as it is for individual-route planning, such as when and where to deploy aircraft and which aircraft to deploy.

The following are questions that airline executives might ask themselves in order to determine their companies’ prospects for benefiting from a more rigorous approach to demand planning:

- Does our forecasting team tend to think in terms of GDP rules of thumb? Does this result in a reliance on blanket goals rather than distinctive growth strategies for different routes and markets?
- Do we understand the causes of yield degradation in our markets over the past ten years? Has our management team taken the time to relate them to changes in capacity? Are there learning processes we could establish to make sure we don’t repeat past mistakes?
- Are the demand projections for our international routes based on an understanding of the fundamental demand characteristics of each route, or are they just a simple blend of GDP growth at both ends of the

route? Do the projections recognize the difference between the outbound and inbound components of demand? If so, do they also take into account different drivers of demand in each country, such as GDP per capita?

- What pronouncements has our airline made recently about the outlook for demand and the basis for our capacity decisions? Are we signaling our desire for economically feasible levels of yield and demand? Or are we compounding the

industry's excess-capacity problem by accepting historical rules of thumb?

- What strategic advantage could we get from better understanding the components of underlying demand in each of our markets and on each of our routes? Are some routes going to have so much new added capacity that we should change our strategy now? Are there routes on which we have such a cost advantage that we could afford to add even more capacity than we planned?

The airline industry has spent too little time and too little effort on demand forecasting. Individual airlines have too readily employed rules of thumb and groupthink when considering capacity decisions that can make or break an industry. More focus on understanding what drives their customers—and perhaps less focus on buying aircraft to fly them in—could help airline managers create a better outcome for their companies, their shareholders, and their industry.



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