OLIVER WYMAN

Airline Economic Analysis
for the Raymond James Global Airline Conference

By:

Bob Hazel
Aaron Taylor
Andrew Watterson

Introduction

In our annual economic analysis, five changes affecting US airlines stand out since last year (Q3 2009 – Q3 2010):

- First, the CASM gap between value carriers and network carriers is the smallest we have seen over a seven-year period. When adjusted for stage length and aircraft type, the sharp line that has divided value carriers and network carriers is becoming blurred.
- Second, both value and network carriers have maintained strong cost discipline. On a system basis, overall CASM increases totaled about 2.3% from Q3 2009 to Q3 2010. Value carrier CASM increased 4.9% while network carrier CASM increased by only 1.7%. Excluding fuel, CASM declined by 1.7% for network carriers and increased by 2.4% for value carriers.
- Third, after the dramatic decline from 2008 to 2009, fuel costs have been increasing but with less volatility.
- Fourth, both network and value carriers have experienced solid RASM growth year-over-year. Consistent with past cycles, network carriers have experienced stronger RASM growth during this recovery than value carriers.
- Fifth, capacity discipline has strongly supported the recent increase in RASM as load factors have leveled off.

Primarily because recent cost and revenue data is available on a comparative basis for US carriers, this report focuses most heavily on developments at those carriers. However, it also contains limited coverage of international carriers. In this report, we cover the following topics:

US Carriers

International Carriers

US Carriers

1. Carriers Included and Methodology

The largest US value carriers are included in this analysis, as are the largest US network carriers. The carriers selected represent more than 85% of US carrier ASMs.[1]

Our data sample—Value carriers (low-cost):

1. AirTran
2. Allegiant
3. Frontier[2]
4. JetBlue
5. Southwest
6. Spirit
7. Virgin America[2]

Our data sample—Network carriers:

1. Alaska
2. American
3. Continental
4. Delta
5. Hawaiian[2]
6. Northwest[3]
7. United
8. US Airways

Most of the analysis is based on third quarter 2010 data, which is the most recent US DOT (Form 41) data available. DOT data was used instead of SEC filings to permit comparisons of specific equipment types and ensure that non-airline-related costs did not dilute the specific focus on airline costs. In situations where unit costs changed materially from quarter to quarter, we used longer time periods and noted the applicable period in the exhibits. For carriers outside the US, we have used the most recent reporting period available on a comparative basis.

[1] The primary category not included is regional carriers, although some cost analysis is included for that sector as well.
[2] Carriers not included in last year's study.
[3] Northwest data is prior to 2010.

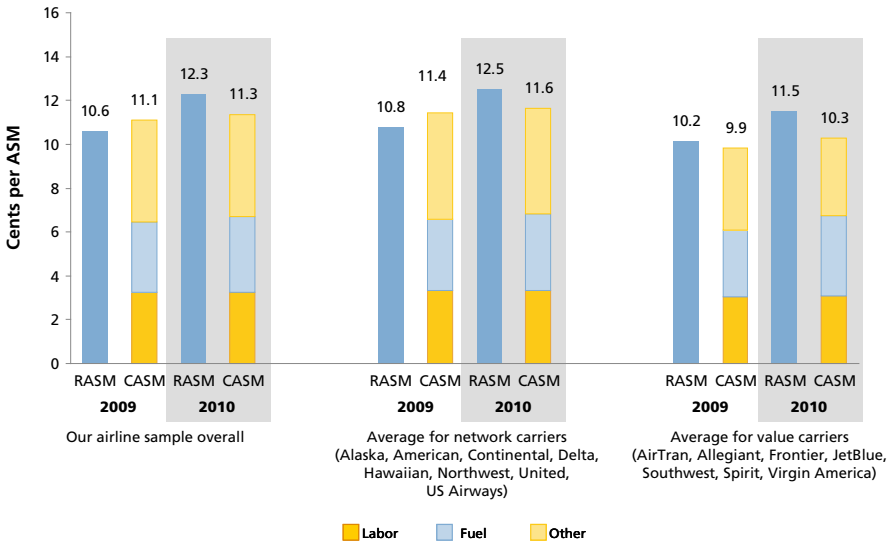
Unless indicated otherwise, the revenues and costs provided are for mainline domestic operations only. We have removed the revenues and costs associated with the carriers' regional affiliates by correcting for their transport-related revenues and costs; although, it is impossible to do so with absolute precision. We caution the reader that we've included more carriers in this year's report, so historical numbers may not match last year's report.

2. Value Versus Network Carrier RASM/CASM Comparison

The large international component of the network carriers' systems means that for some comparisons between network and value carriers, a system-to-system comparison is useful, while for others a domestic-to-domestic comparison is useful. A system-to-system comparison is most useful in determining the relative success of each business model—are the network carriers becoming more successful over time as measured by their RASM/CASM differential in comparison to the value carriers? A domestic-to-domestic comparison is most useful in determining whether the network carriers are able to compete with value carriers in markets where they fly head-to-head. Both comparisons are discussed below.

Exhibit 1 shows the RASM and CASM comparison for network versus value carriers for the third quarters of 2009 and 2010. This initial comparison is on a system basis, including international service (but excluding transport-related revenue and cost).

Exhibit 1: Comparison of System RASM and CASM for Q3 2009/2010
(Excluding regional affiliates)



Source: PlaneStats.com for Q3 2009 and Q3 2010. Mainline operations only, excludes transport-related revenue and cost (regionals).

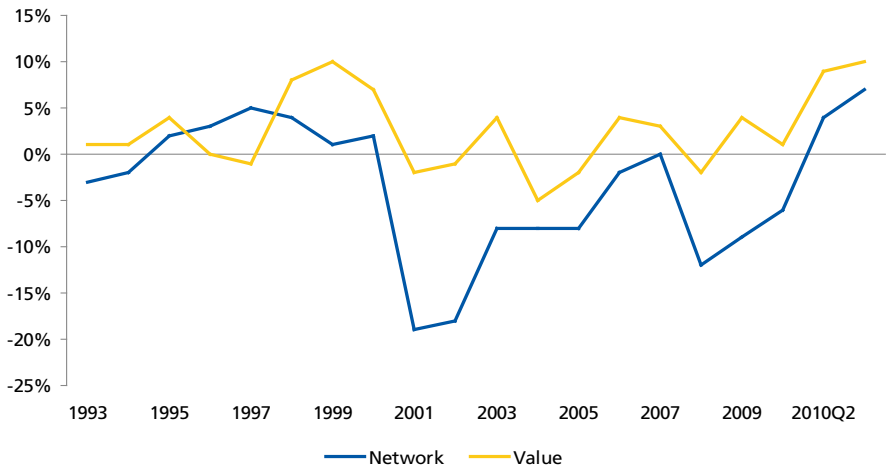
In Q3 2010, the average CASM of our sample airlines was 11.3¢, which was 2.3% higher than in Q3 2009. For network carriers, the average CASM was 11.6¢, which was 1.7% higher than the prior period. For value carriers, the average CASM was 10.3¢, which was 4.9% higher.

The average RASM of our sample airlines was 12.3¢ in Q3 2010, which was 15.7% better than in Q3 2009. For network carriers, the average RASM was 12.5¢, which was 16.3% better than the prior period, while for value carriers, the average RASM was 11.5¢, which was 13.3% better. From Q3 2009 to Q3 2010, the network carrier RASM premium over the value carriers increased from 6.0% to 8.8%.

Viewing the RASM and CASM changes together, we see that over the one-year period, both value and network carriers performed much better on a system basis. For network carriers, the margin between RASM and CASM, which was negative 5.9% in Q3 2009, increased to a positive 7.7% in Q3 2010. For value carriers, the RASM/CASM margin increased from 3.1% to 11.3%.

Exhibit 2 shows the RASM/CASM margin for both groups over a nearly 20-year period on a yearly basis, and then for each of the last three quarters. On a system basis, the network carriers have been operating their businesses more successfully over the past year both in absolute terms and in relation to the value carriers.

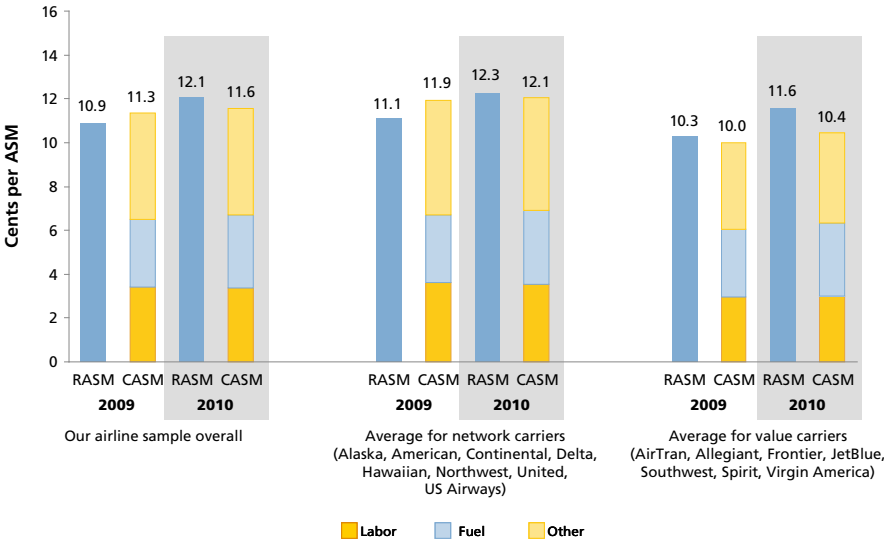
Exhibit 2: Historical System RASM/CASM gap for all network and value carriers,1991 through Q3 2010 (Excluding regional affiliates)



Source: PlaneStats.com year-end to 2009 and quarterly 2010. Mainline operations only, excludes transport-related revenue and cost (regionals). Carrier set differs from the 15 carriers in our study—for each year of the series, it includes all value and network carriers reporting DOT Form 41.

Exhibit 3 shows another RASM and CASM comparison for network versus value carriers. This comparison is for domestic service only (again excluding transport-related revenue and cost).

Exhibit 3: Comparison of Domestic RASM and CASM (Q3 2009/2010)



Source: PlaneStats.com. Mainline operations only, excludes transport-related revenue and cost (regionals).

In Q3 2010, the average domestic CASM of our sample airlines was 11.6¢, which was 2.0% higher than in Q3 2009. For network carriers, the average domestic CASM was 12.1¢, which was 1.0% higher than the prior period. For value carriers, the average CASM was 10.4¢, which was 4.3% higher.

From Q3 2009 to Q3 2010, the value carrier CASM advantage over network carriers declined 2 percentage points to 14%. This cost advantage is smaller than the gaps of previous years.

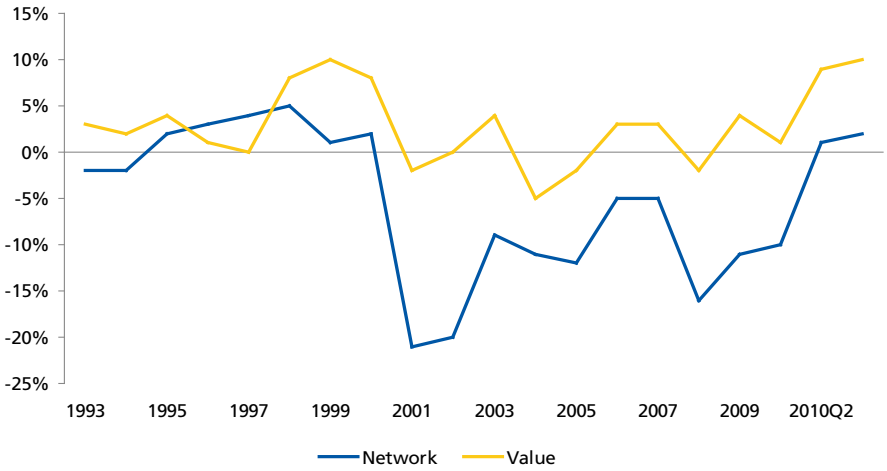
The average RASM of our sample airlines was 12.1¢ in Q3 2010, which was 11.1% better than in Q3 2009. For network carriers, the average RASM was 12.3¢, which was 10.5% better than the prior period, while for value carriers, the average RASM was 11.6¢, which was 12.5% better. From Q3 2009 to Q3 2010, the network carrier RASM premium over the value carriers decreased from 8.0% to 6.1%.

Viewing the domestic RASM and CASM changes together, we see that over the one-year period, both value and network carriers performed much better. For network carriers, this meant that the margin between domestic RASM and CASM, which was negative 7.0% in Q3

2009, increased to a positive 1.8% in Q3 2010. For value carriers, the domestic RASM/CASM margin increased from 2.8% to 10.9%.

Exhibit 4 shows the domestic RASM/CASM margin for both groups over a nearly 20-year period on a yearly basis, and then for each of the last three quarters. During Q2 and Q3 2010, RASM exceeded CASM for the network carriers, but for Q1 it did not. Unless network carriers find a way to operate their domestic systems more profitably, they are likely to increasingly serve as feeders to the network carriers' international operations.

Exhibit 4: Historical Domestic RASM/CASM gap for all network and value carriers, 1991 through Q3 2010 (Excluding regional affiliates)



Source: PlaneStats.com year-end to 2009 and quarterly 2010. Mainline operations only, excludes transport-related revenue and cost (regionals). Carrier set differs from the 15 carriers in our study—for each year of the series, it includes all value and network carriers reporting DOT Form 41.

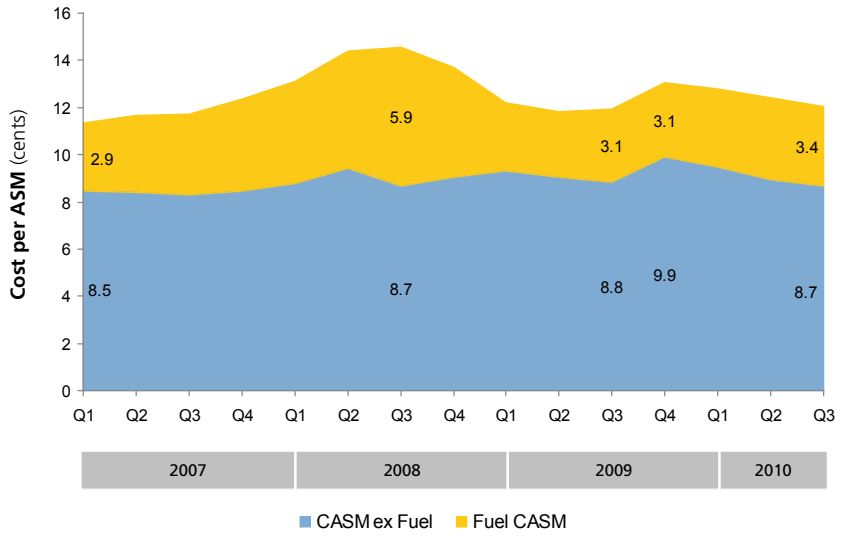
Costs

3. Value Versus Network Carrier CASM Comparison Excluding Fuel

Given the volatility of fuel prices and the impact of hedging over the past several years, it is important to look more closely at CASM changes excluding fuel for the two carrier groups. *Exhibit* 5 shows network carrier CASM with and without fuel since Q1 2007. CASM ex-fuel for the network carriers increased during the second half of 2009, peaked in Q4, and has been declining since then. From Q3 2009 to Q3 2010, CASM ex-fuel for the network carriers decreased by 1.7%. Over the lon-

ger period from Q1 2007 to Q3 2010, the average network carrier CASM ex-fuel increased by only 2.4%, from 8.5¢ to 8.7¢.

Exhibit 5: Domestic CASM and fuel CASM growth—sample network carriers
(Excluding regional affiliates)

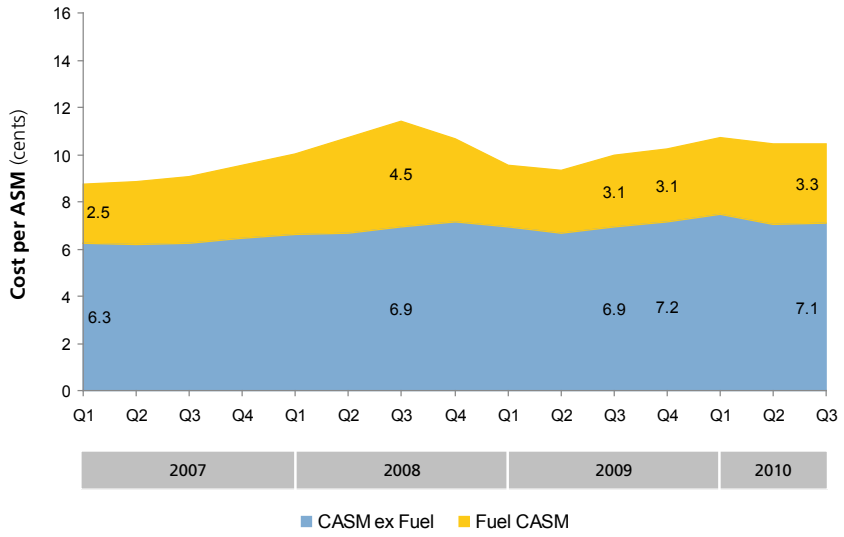


Source: PlaneStats.com. Mainline operations only, excludes transport-related revenue and cost (regionals).

For the value carriers, the corresponding CASM information is shown in *Exhibit 6*. From Q3 2009 to Q3 2010, CASM ex-fuel for the value carriers increased by 2.4%. Value carriers incurred greater fuel cost increases than network carriers during this period, primarily because of network carriers' increased fuel efficiency. Over the longer period from Q1 2007 to Q3 2010, the average value carrier CASM ex-fuel increased by 13.6%, from 6.3¢ to 7.1¢.

Because Southwest flies 54% of value carrier domestic ASMs, changes in its CASM are the primary driver of value carrier CASM changes. Southwest's high labor CASM is well known, and 68% higher than the average labor CASM of the other value carriers. The average value carrier labor CASM is 3.0¢; Southwest's is 3.7¢ while the average of the other value carriers is only 2.2¢ for YEQ3 2010.

Exhibit 6: Quarterly Domestic CASM and fuel CASM growth—sample value carriers (Excluding regional affiliates)

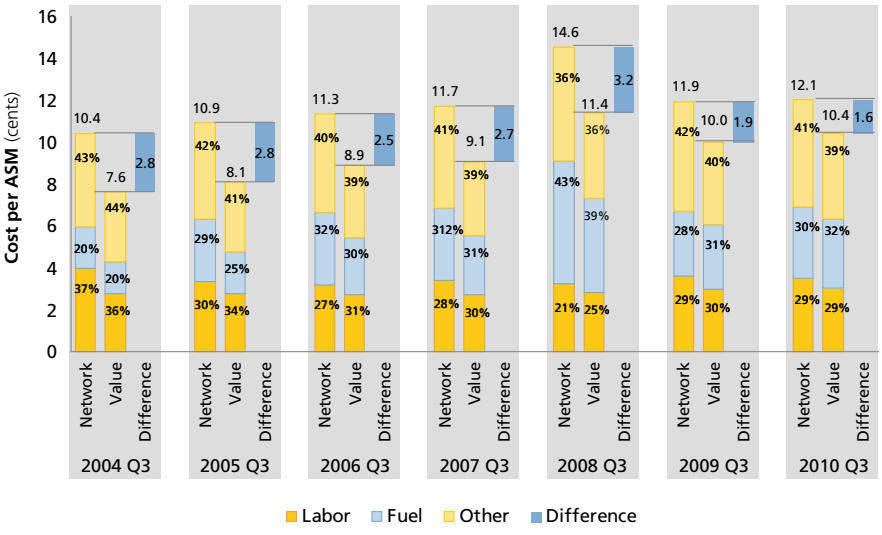


Source: PlaneStats.com. Mainline operations only, excludes transport-related revenue and cost (regionals).

4. Long-term CASM Trends

Exhibit 7 shows the domestic CASM differential between network and value carriers broken into labor, fuel, and other for the 3rd quarter of each year from 2004 through 2010.

Exhibit 7: Comparison of Domestic CASM between network and value carriers over time



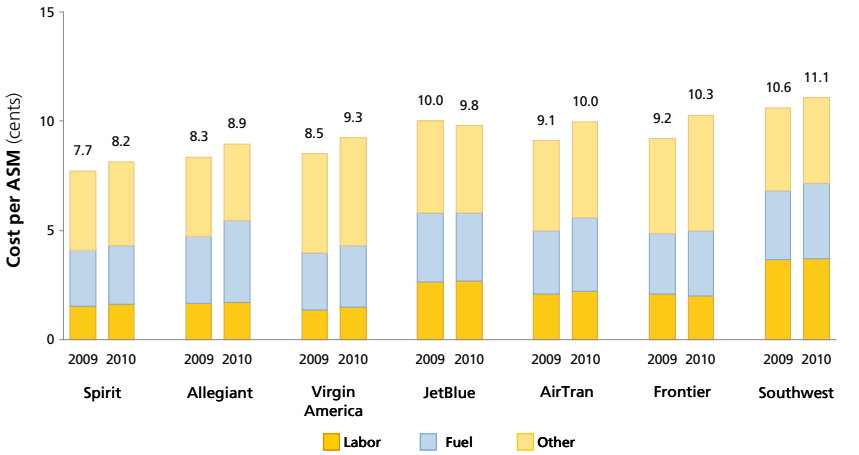
Source: PlaneStats.com. Mainline operations only, excludes transport-related revenue and cost (regionals).

Over the seven-year period, the difference in CASM between network and value carriers has declined substantially, particularly in the past two years. Looking at Q3 data each year, we see that in 2004 and 2005, the value carrier CASM was approximately 26% lower than the network carrier CASM. The cost gap declined slightly to 21–23% between 2006 and 2008, and then dropped to an average of about 15% over the past two years.

5. Individual Carrier CASMs and Recent Changes

With the exception of JetBlue, the value carriers experienced CASM increases over the one-year term between Q3 2009 and Q3 2010, ranging from 0.4¢ to 1.0¢. See *Exhibit 8*. In general, these changes are less than in recent years when the industry experienced higher volatility as a result of changing fuel prices; and the value carrier cost order rankings therefore changed less than in the recent past. Before adjusting for stage length, Spirit had the lowest CASM at 8.2¢, followed by Allegiant with a CASM of 8.9¢, Virgin America with a CASM of 9.3¢, JetBlue with a CASM of 9.8¢, AirTran with a CASM of 10.0¢, Frontier with a CASM of 10.3¢, and Southwest with a CASM of 11.1¢. However, these are not stage length adjusted CASMs, and that adjustment changes the rankings.

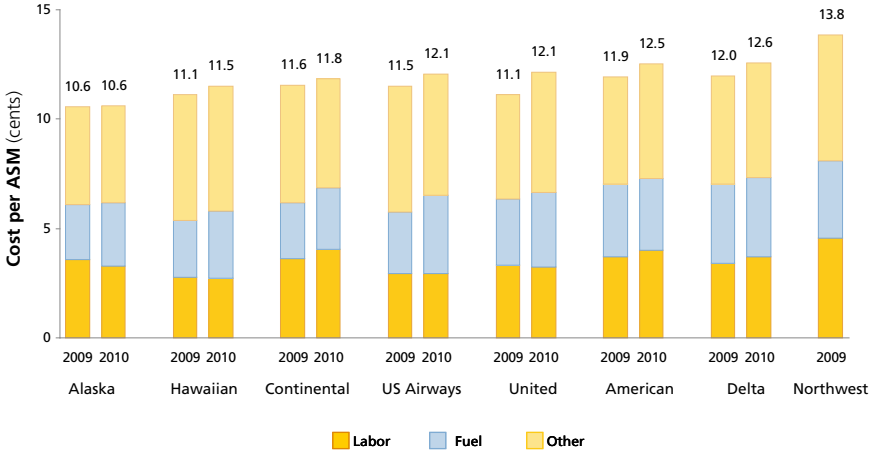
Exhibit 8: Q3 2009/2010 Domestic CASM breakdown by airline—value carriers (Excluding regional affiliates)



Source: PlaneStats.com for Q3 2009 and Q3 2010. Mainline operations only, excludes transport-related revenue and cost (regionals).

The network carriers experienced CASM increases in the same range as the value carriers. *Exhibit 9* shows the CASM for each network airline in our sample for Q3 2009 compared with Q3 2010. Before adjusting for stage length, Alaska had the lowest CASM at 10.6¢, followed by Hawaiian with a CASM of 11.5¢, Continental with a CASM of 11.8¢, US Airways with a CASM of 12.1¢, United with a CASM of 12.1¢, American with a CASM of 12.5¢, and Delta with a CASM of 12.6¢. As with the value carriers, these are not stage length adjusted CASMs, and that adjustment changes the rankings.

Exhibit 9: Q3 2009/2010 Domestic CASM breakdown by airline—network carriers (Excluding regional affiliates)

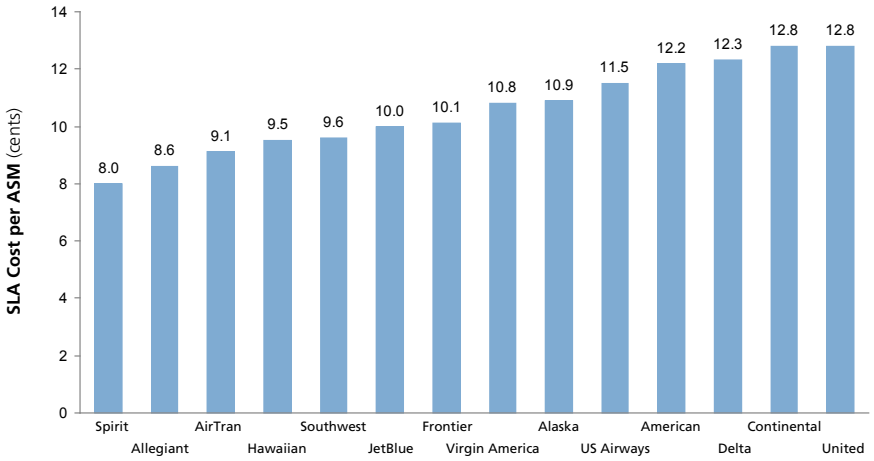


Source: PlaneStats.com for Q3 2009 and Q3 2010. Mainline operations only, excludes transport-related revenue and cost (regionals). 2010 Northwest data is included in 2010 Delta data.

In *Exhibit 10*, we stage length adjust the Q3 2010 unit costs for both groups of carriers to find which carriers have the lowest costs. After doing so, Spirit and Allegiant remain the lowest and second lowest cost value carriers respectively with Air Tran and Southwest following.

Among the network carriers, Hawaiian and Alaska have the lowest costs, respectively. Hawaiian's costs equal the median of the value carrier group and Alaska is on par with the high end of that group.

Exhibit 10: Domestic CASM by airline—stage length adjusted to 1,000 miles Q3 2010 (Excluding regional affiliates)



Source: PlaneStats.com for Q3 2010. Mainline operations only, excludes transport-related revenue and cost (regionals). 2010 Northwest data is included in 2010 Delta data.

6. Comparing CASM for Similar Aircraft Operated by Different Airlines

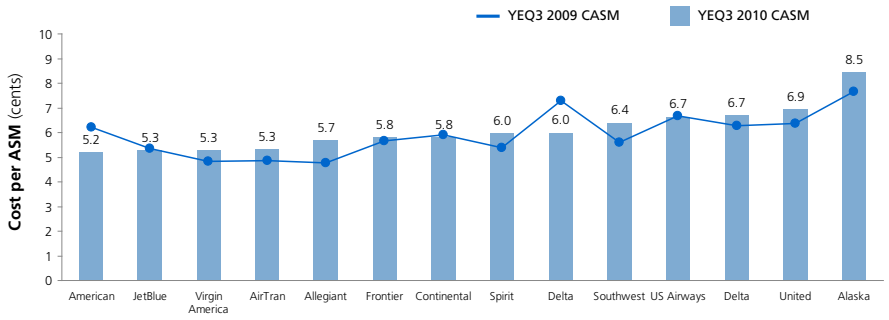
All things being equal, larger aircraft tend to have lower unit costs than smaller aircraft. This can impact airline-to-airline comparisons if they operate different sized aircraft. To best compare the operating cost efficiency of value and network carriers, we selected an aircraft in each carrier's fleet roughly comparable to Southwest's most efficient aircraft, the 737-700. For carriers that operate several aircraft types similar to the 737-700, we chose the one closest in capacity to, but larger than, Southwest's. For example, United brackets Southwest's 137-seat 737-700s with 120-seat A319s and 147-seat A320s. We chose the A320. Delta is represented by two aircraft—the 737-800 originally flown by Delta and the A320 originally flown by Northwest—because Delta was two separate companies during the previous year.

In *Exhibit 11*, we plotted the average stage length for each of our airline/aircraft combinations and the direct cost per available seat mile at that stage length. These are based on the direct operating costs reported by the carriers on DOT Form 41 for each aircraft type. Indirect costs, in contrast, are not reported by aircraft type and may be allocated differently depending on individual carrier methods. Direct costs are frequently used by carriers to help analyze individual route contributions to the system. This exhibit does not present a complete picture of each airline's costs even for the particular aircraft type, but it does provide insight into the core operating cost of the aircraft, as

it includes pilots, fuel, aircraft ownership, maintenance, and insurance. To smooth out quarterly variations caused primarily by maintenance requirements, the data is for the full year ending Q3 2010 and Q3 2009. In addition, we stress that these costs are for specific aircraft types, not for the carriers' total operations.

A glance at the table shows that American's 737-800 has the lowest direct operating CASM, 22% lower than Delta's 737-800, which has approximately the same stage length. The chart also highlights the changes in CASM since Q3 2009 for many carriers.

Exhibit 11: Direct CASM for selected aircraft type at actual average stage length (YEQ3 2009 and YEQ3 2010)



Aircraft	737-800	A320	A320	737-700/LR	MD80	A319	737-800	A319	A320	737-700/LR	A320	737-800	A320	737-700/LR
Stage Length	1122	1293	1556	1001	913	947	1273	931	1124	705	1112	1180	995	963
Seats	152.7	150.0	149.0	137.0	149.2	136.0	158.6	145.0	148.0	137.0	150.0	160.0	141.8	124.0
Fleet %*	18.4%	72.8%	64.3%	37.8%	100.0%	77.1%	32.7%	92.2%	9.3%	63.3%	20.2%	11.1%	27.0%	10.7%

*Fleet type as percentage of total fleet.

Source: PlaneStats.com for YEQ3 2009 and 2010. Mainline operations only. Costs include direct aircraft operating expenses. Direct costs include pilots, fuel, aircraft ownership, maintenance and insurance. Indirect expenses not reported by aircraft type. Q2 2010 AirTran data used. 2010 Northwest data is included in 2010 Delta data.

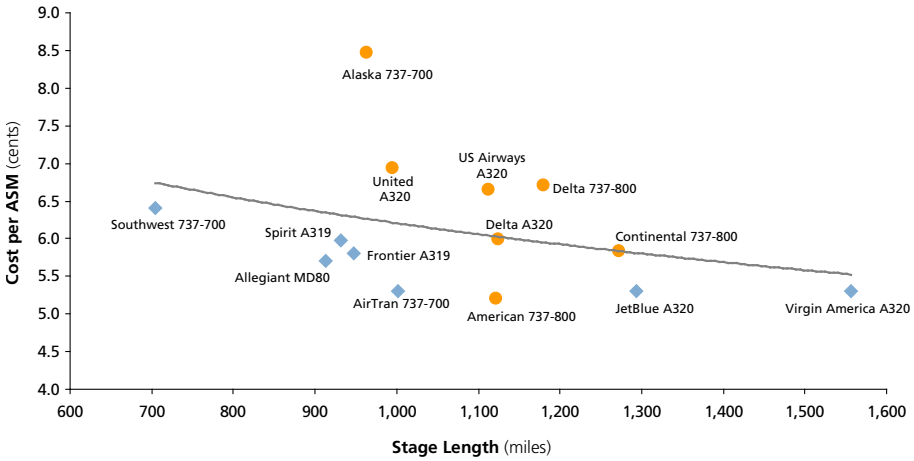
American's success in bringing down the cost of operating the 737-800 is the result of three important changes in its 737-800 fleet. First, over the last two years American increased the 737-800 fleet by 91%, from 77 to 147 aircraft, and as the fleet has grown rapidly, its Direct CASM has decreased. A higher proportion of lower seniority pilots are likely flying the aircraft; the newest aircraft have no maintenance cost yet; and over 50% of the fleet have the newest, most fuel efficient engines. Second, American is retrofitting the 737-800 fleet and adding an average of 12 seats per aircraft. Finally, American changed the mission of the 737-800 fleet, deploying the aircraft in longer haul markets, which increased the stage length 11%. The combined power of these levers is well known and traditionally used by value carriers in their growth phase, but rare among network carriers.

7. Adjusting for Stage Length

Since length of flight strongly affects unit costs—the longer the flight, the lower the unit costs—it makes sense to compare unit costs in relation to average stage length.

To help visualize the cost and stage length differences among the carriers, in *Exhibit 12* we have plotted unit costs (Y axis) on a chart against average stage length (X axis) for our group of carrier/aircraft combinations. To facilitate comparisons, we show an industry average distance-related cost curve. By visualizing additional curves drawn above and below the curve, it is apparent that the two lowest cost aircraft in terms of direct operating costs are AirTran's 737-700 and American's 737-800. It is also apparent that the value carriers, with the exceptions of JetBlue and Virgin America, generally operate their narrowbody aircraft at shorter stage lengths than the network carriers. Turning to the network carriers, all have higher Direct CASMs than the value airlines when adjusted for stage length, except American, whose 737-800 performance is discussed in the previous section.

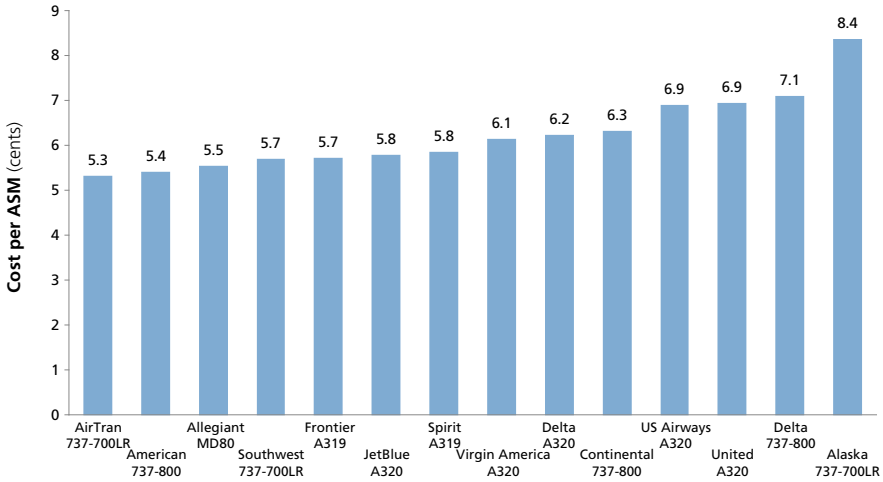
Exhibit 12: Direct CASM per airline for selected narrowbody aircraft type plotted against average stage length (YE Q3 2010)



Source: PlaneStats.com for YEQ3 2010. Mainline operations only. Costs include direct aircraft operating expenses. Direct costs include pilots, fuel, aircraft ownership, maintenance and insurance. Indirect expenses not reported by aircraft type. Q2 2010 AirTran data used. 2010 Northwest data is included in 2010 Delta data.

Using an accepted stage length adjustment method, we recomputed the YEQ3 2010 Direct CASM for each aircraft type based on a standardized stage length of 1,000 miles. *Exhibit 13* shows the results, which are useful in understanding which carriers operate most efficiently.

Exhibit 13: Direct CASM at 1,000 mile stage length for selected aircraft (YEQ3 2010)



Source: PlaneStats.com for YEQ3 2010. Mainline operations only. Costs include direct aircraft operating expenses. Direct costs include pilots, fuel, aircraft ownership, maintenance and insurance. Indirect expenses not reported by aircraft type. Q2 2010 AirTran data used. 2010 Northwest data is included in 2010 Delta data.

As you can see in *Exhibit 13*, AirTran (5.3¢/Direct CASM) is the low-cost leader at stage lengths of 1,000 miles. American (5.4¢) is in second place, closely followed by Allegiant (5.5¢) and Southwest and Frontier (5.7¢). Alaska (8.4¢) has the highest Direct CASM of the sample carriers, 58% higher than AirTran. (Alaska's 737-700 has 124 seats versus 137 for AirTran.) We stress that the chart shows direct costs only, and that the inclusion of indirect costs would change the results somewhat as the network carriers tend to have higher indirect costs. Even as presented, the carriers with the highest direct CASMs are all network carriers. However, the difference between some of the network carriers and the value carriers is slight.

8. Comparing CASM for Similar Aircraft Operated by Different Airlines—Widebodies

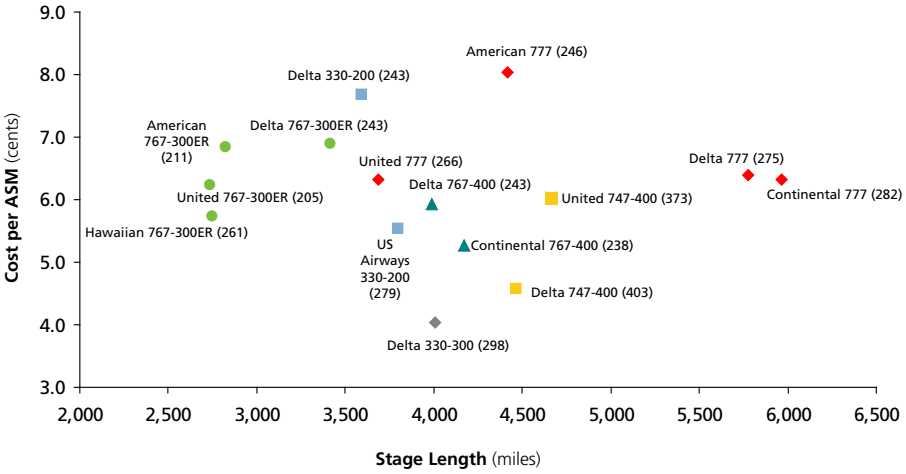
We conducted the same type of analysis for widebodies operated by multiple US network carriers to see what trends are evident, and found widely varying results. See *Exhibit 14*, which shows Direct CASM per airline for selected widebody aircraft types plotted against average stage length.

This variation is not surprising since there is a larger range of seating configuration choices among the carriers than is the case with narrowbody aircraft. In particular, the choice of two-class, three-

class, or even four-class service and the installation of fully lie-flat premium seats can reduce the number of seats over which the costs are allocated. For example, Hawaiian installs 27% more seats in its 767-300 than United, while Continental has almost 15% more seats in its 777-200 than American. In principle, the lower seat configurations that result in higher unit costs should also result in higher unit revenues. While the available data do not permit us to explicitly model this here, we will examine overall carrier revenue performance.

The 777, generally used for longer range flights with premium configurations, has the highest direct operating costs, with American's 777 having the highest costs of all. A330 direct operating costs tend towards the lower end, although Delta's 330-200, with a lower seat configuration, has very high direct operating costs.

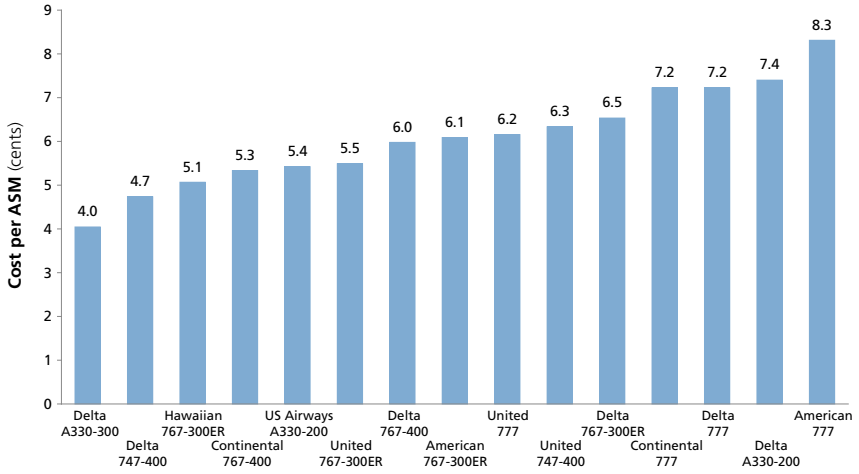
Exhibit 14: Direct CASM per airline for selected widebody aircraft types plotted against average stage length (YEQ3 2010)



Source: PlaneStats.com for YEQ3 2010. Mainline operations only. Costs include direct aircraft operating expenses. Direct costs include pilots, fuel, aircraft ownership, maintenance and insurance. Indirect expenses not reported by aircraft type.

These conclusions are shown more clearly in *Exhibit 15*, which adjusts direct operating costs for a standardized stage length of 4,000 miles.

Exhibit 15: Direct CASM at 4,000 mile stage length for selected aircraft (YEQ3 2010)

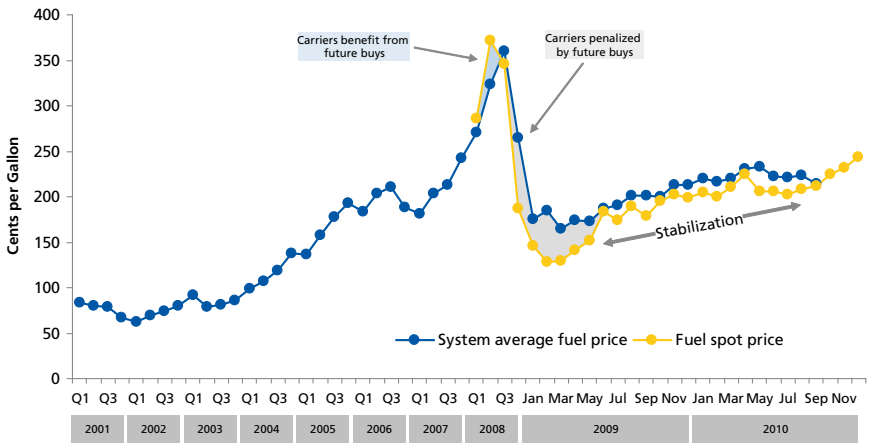


Source: PlaneStats.com for YEQ3 2010. Mainline operations only. Costs include direct aircraft operating expenses. Direct costs include pilots, aircraft ownership, maintenance and insurance. Indirect expenses not reported by aircraft type. 2010 Northwest data is included in 2010 Delta data.

9. Fuel Prices

As shown in *Exhibit 16*, fuel prices fell dramatically following the peak in July 2008 of approximately $3.80 per gallon. Since bottoming out in the first quarter of 2009, fuel prices have increased, although with less volatility. From Q3 2009 to Q3 2010, fuel CASM increased by 8.7%, with spot prices up another 13% during Q4 2010. As of Q3 2010, fuel accounted for 28.5% of CASM for our airline sample. For value carriers, the figure was higher, at 31.8%, and for network carriers lower, at 27.8%. Experts have pointed out that the fuel price increases of the past quarter are the steepest since 2007.

Exhibit 16: System average fuel price (US carriers) and fuel spot price (January 2001 through December 2010)

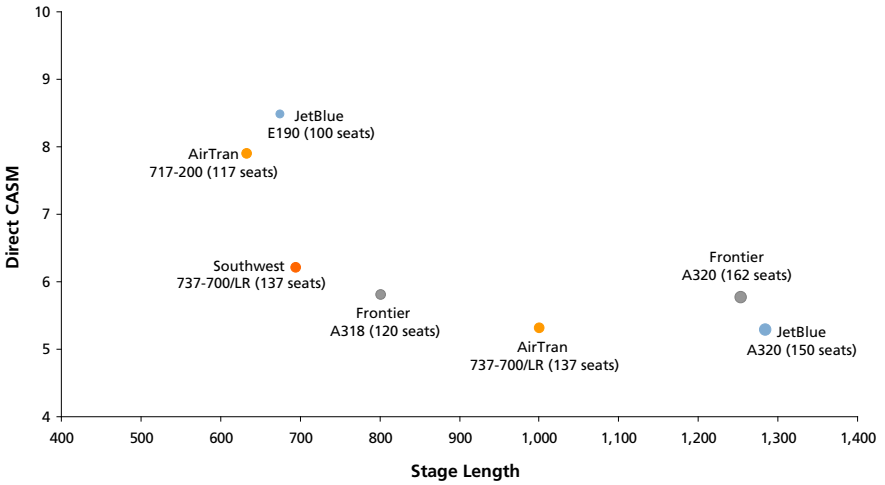


Source: Oliver Wyman research based on US DOT (Form 41) Fuel Cost and Consumption Report and US Energy Information Administration data.

10. CASMs for Smaller Aircraft

Traditionally, value carriers have operated with a single aircraft type, although that model has changed over time. Three value carriers in our sample—AirTran, JetBlue, and Frontier—currently operate two different narrowbody aircraft. With Southwest's acquisition of AirTran, the combined carrier will inherit those two aircraft types. *Exhibit 17* illustrates how the smaller aircraft compare in efficiency with the larger aircraft.

Exhibit 17: Direct CASM plotted against average stage length by aircraft type, actual fuel prices (YEQ2 2010)



Source: PlaneStats.com for YEQ2 2010. Mainline operations only. Costs include direct aircraft operating expenses. Direct costs include pilots, aircraft ownership, maintenance and insurance. Indirect expenses not reported by aircraft type.

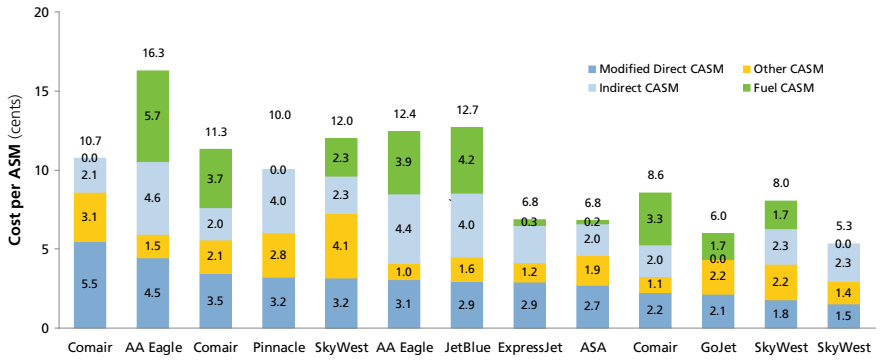
AirTran's 737-700 has the lowest unit costs measured on a Direct CASM basis when its stage length is taken into account, lower than Southwest's 737-700. Also, AirTran's 117-seat 717 has lower costs than JetBlue's 100-seat E190. Frontier's A318 has lower stage length adjusted costs than its larger A320.

The smaller jets operated by the regional carriers, ranging in size from ERJ 135s to E190s, sometimes complement and sometimes compete with other aircraft operated by network and value airlines. How do those aircraft compare in terms of unit costs? *Exhibit 18* depicts the CASMs for specific aircraft operated by specific airlines.

Regional carriers have different expense payment arrangements in their Capacity Purchase Agreements (CPAs) with their mainline partners. The number of expense categories paid directly by mainlines, and not appearing in the regional carriers' costs, has increased over

time. Fuel and aircraft ownership were among the first to be directly paid in some CPAs; more recently some mainlines have taken over payment for ground handling and engine maintenance. As a result, measuring total CASM across regional carriers and aircraft is misleading. Instead, a more segmented view of CASM is needed to compare performance. In *Exhibit 18* we have grouped the costs into four buckets: defined specifically for this regional carrier analysis: Indirect costs (including ground handling), Fuel, Other (including engine maintenance and aircraft ownership), and Modified Direct CASM (including pilots, pilot training, airframe maintenance, maintenance burden, and other direct costs, but NOT aircraft ownership, engine maintenance, and fuel & oil costs). The last bucket includes cost items that are universally paid for by the regional airline and therefore represent the best measure of comparison. While a small portion of the regionals' total costs, it is on the basis of these costs that regional carriers tend to compete for new flying from mainline partners.

Exhibit 18: Regional carrier CASM plotted against average stage length using actual fuel prices (Q2 2010)



Aircraft	CRJ 200	ERJ 145	CRJ 700	CRJ 200	CRJ 200	CRJ 700	E190	ERJ 145	CRJ 700	CRJ 900	CRJ 700	CRJ 700	CRJ 900
Stage Length	422	494	557	390	450	621	664	560	542	658	608	701	715

Notes: Fuel allocation may differ significantly between airlines based on contractual setup with parent company/network carrier.
Direct CASM Includes direct costs except aircraft ownership, engine maintenance, and fuel & oil costs.
Other CASM includes rent and aircraft depreciation & amortization and engine maintenance.

Source: PlaneStats.com for YEQ2 2010.

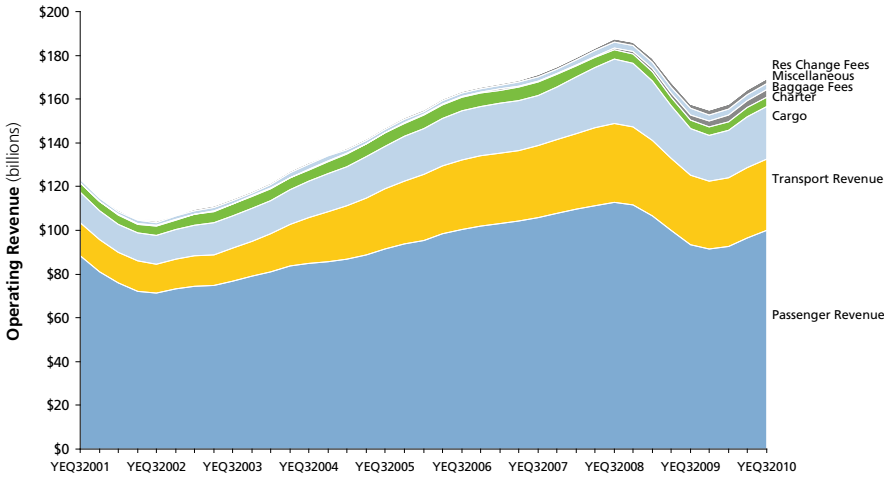
Using Modified Direct CASM (MDC) as the measure, the low-cost champion is the Skywest CRJ 900 with an MDC of 1.5¢ per ASM, while its competitor Comair has an MDC of 2.2¢ for the same aircraft (but shorter stage length). JetBlue's slightly larger capacity E190 has an MDC of 2.9¢, 32% higher than the Comair aircraft. Notice also the range of MDCs for the four operators of the CRJ 700: Skywest 1.8¢, GoJet 2.1¢, ASA 2.7¢, AA Eagle 3.1¢, and Comair 3.5¢. The two aircraft with the highest MDCs are the CRJ 200, at 5.5¢ for Comair, and ERJ 145 at 4.5¢ for AA Eagle.

Revenue

11. Changes in Revenue over Time

Exhibit 19 shows US airline revenue over the past 10 years, including revenue from cargo, regional carriers (transport revenue), and change fees. All US carriers are included in the chart. Peak revenue for the decade occurred during YEQ3 2008. Revenue declined sharply the following year and has recovered to about the YEQ3 2007 level. Despite all the public discussion of fees and charges collected beyond the ticket price, they remain a small percentage of airline revenue. A more detailed discussion of the sources and drivers of airline revenue follows.

Exhibit 19: Operating revenue, all reporting carriers, including transport revenue (YEQ3 2001 – YEQ3 2010)



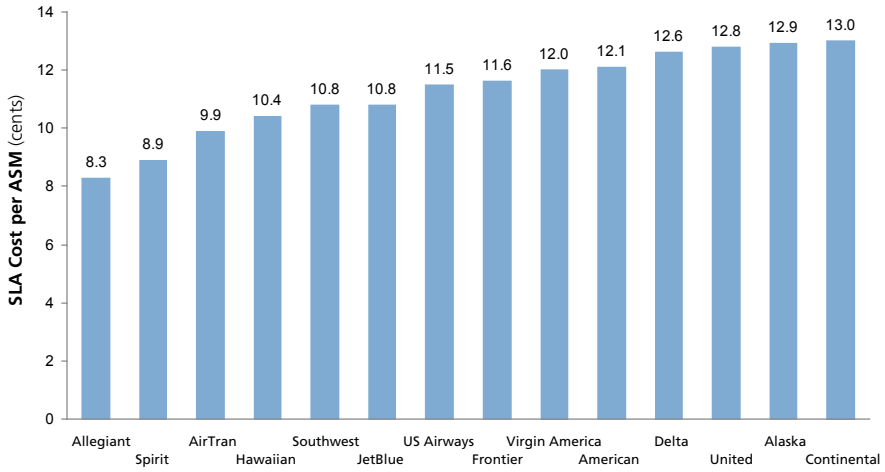
Source: PlaneStats.com advanced query > income statement for all reporting carriers.

12. Carrier Unit Revenue Performance

Exhibit 20 shows the stage length adjusted domestic RASM for all carriers in the study, similar to the CASM ranking in the cost section. The gap between the highest and lowest unit revenue performance is 36%, which is about the same as the 37% gap between the highest and lowest cost performance. Continental and United rank 1st and 3rd highest in RASM while United and Continental rank 1st and 2nd highest in CASM.

Not surprisingly, the value carriers tend to have a lower RASM than the network carriers. Among the value carriers, Virgin America has the highest RASM, overlapping the lower end of the network range. Allegiant has the lowest RASM, which is consistent with its ancillary revenue-focused business model.

Exhibit 20: Domestic RASM by airline – stage length adjusted to 1,000 miles
Q3 2010 (Excluding regional affiliates)

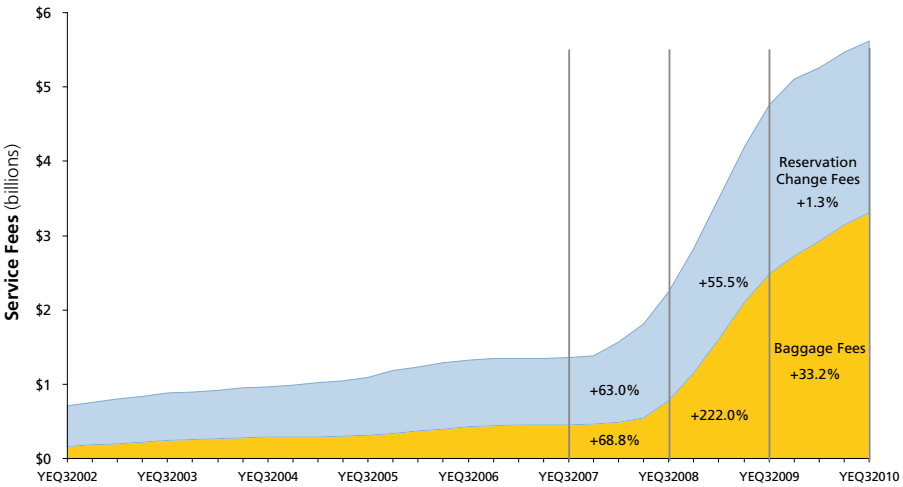


Source: PlaneStats.com for Q3 2010. Mainline operations only, excludes transport-related revenue and cost (regionals). 2010 Northwest data is included in 2010 Delta data.

13. Baggage and Cancellation Fees

Over the past several years, airlines have captured increasing amounts of revenue for non-ticket charges such as baggage, buy-on-board meals, in-flight entertainment, reservations, and change fees; some of which are not included in DOT-reported average airfares or passenger RASM. *Exhibit 21* focuses on two of these categories—baggage fees and cancellation fees—to show the growth to date in both categories.

Exhibit 21: Baggage and reservation change fees
(YEQ3 2001 – YEQ3 2010)



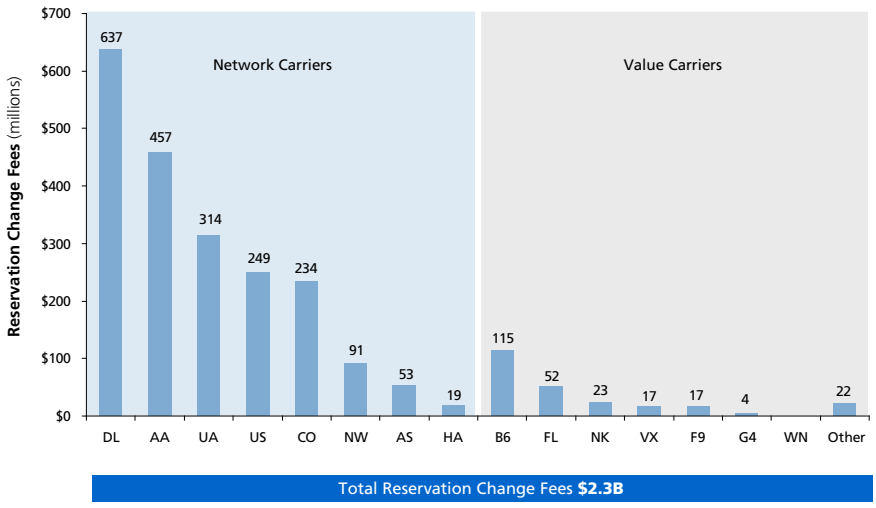
Source: PlaneStats.com advanced query > income statement for all reporting carriers.

These service fees generated $5.6 billion in YEQ3 2010, with bag fees generating the larger share, $3.3 billion, and reservation change fees generating $2.3 billion. While baggage fees have continued to grow over the past two years, reservation change fees have reached a plateau, increasing only 1.3% from YEQ3 2009 to YEQ3 2010. The unanswered question is whether baggage fee revenue, which increased by 33.2% from YEQ3 2009 to YEQ3 2010, will also plateau.

The two carrier groups fundamentally differ in their approach to these fees, and value carriers generate much less absolute revenue from them. For example, JetBlue does not charge for the first bag, and Southwest does not charge for the first two checked bags. Southwest also does not charge a change fee, and JetBlue's change fee is less than that charged by the network carriers. However, value carriers Spirit and Allegiant lead the pack in terms of per passenger service fees as a percentage of revenue. (See *Exhibit 24*).

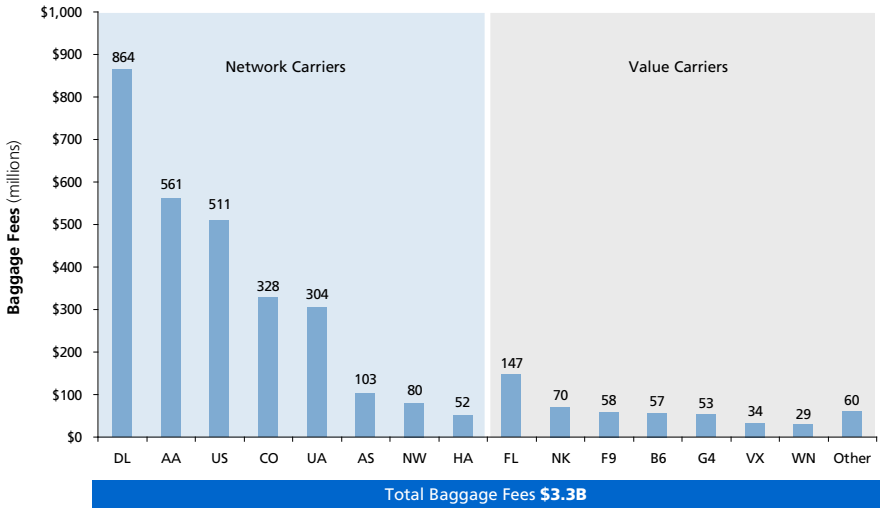
The different approaches are illustrated in *Exhibits 22 and 23*, which show the revenue generated by individual carriers from reservation changes and baggage fees. Because of their large size, the network carriers generate far more absolute revenue from these sources, accounting for 85% of baggage fees and 89% of change fees. Among the value carriers, JetBlue generates the most revenue from reservation change fees, and AirTran generates the most from baggage fees.

Exhibit 22: Reservation change fees by carrier (YEQ3 2010)



Source: PlaneStats.com advanced query > income statement for all reporting carriers.

Exhibit 23: Baggage fees by carrier (YEQ3 2010)



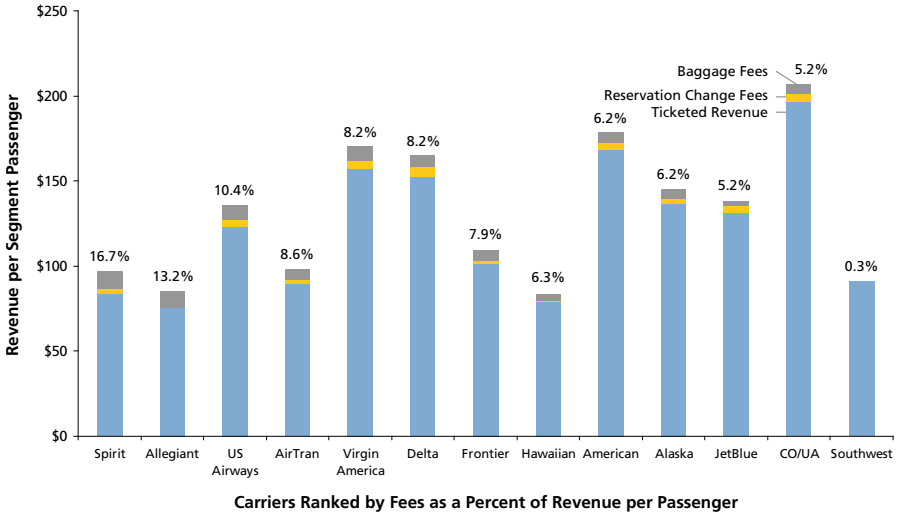
Source: PlaneStats.com advanced query > income statement for all reporting carriers.

Although these fees contribute much needed revenue to the carriers, the average revenue generated from each passenger is smaller than many passenger anecdotes would suggest. The amount of money collected in fares and fees from each segment passenger is broken out for selected carriers in *Exhibit 24*.[4] Excluding Southwest and JetBlue, the average fees collected per segment passenger range from $10 for Allegiant and United to $14 for Spirit. This stands in contrast to the much larger range of average ticket revenue collected per segment passenger, which ranges from $75 for Allegiant to $196 for United.

At first glance, *Exhibit 24* suggests that carriers who charge for bags do not suffer a comparative penalty in ticket prices paid by passengers. In other words, higher average ticket prices may also be accompanied by significant incremental fee revenue. A definitive view of the price and passenger volume impact, however, would require a more detailed analysis than this study permits. Past analyses by Oliver Wyman have found that incremental fee policies have market share impacts.

[4] A segment passenger is a passenger traveling on one segment of what may be a multi-segment itinerary. The long-term average number of segments per one-way itinerary is 1.4. Segment passengers are used here instead of O&D passengers based on the available data at this time.

Exhibit 24: Service fees by carrier (YEQ3 2010)



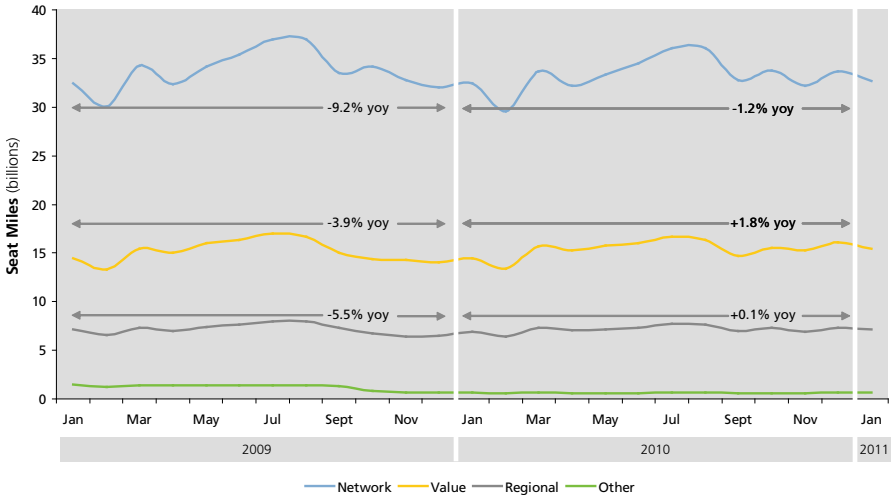
Source: PlaneStats.com advanced query > income statement.

14. Changing Capacity and Fleet Composition in the US Market

Recently, capacity discipline has been an important driver of improved airline RASM and profitability. During much of the decade, value carriers and regional carriers grew rapidly. Even as network carriers reduced their mainline operations, regional carriers filled in. Then in 2009, the industry reduced capacity. As shown in *Exhibit* 25, during 2009, domestic network mainline ASMs declined by 9.2%, regional ASMs by 5.5%, and value airline ASMs by 3.9%. Because value airlines reduced capacity less than the mainline carriers, they continued to gain capacity share even during these difficult times.

In 2010, capacity remained tight. Domestic network carrier ASMs declined slightly by 1.2%; regional ASMs were basically flat at positive 0.1%; and the value carriers grew by only 1.8%—still resulting in a small capacity share gain for the value carriers.

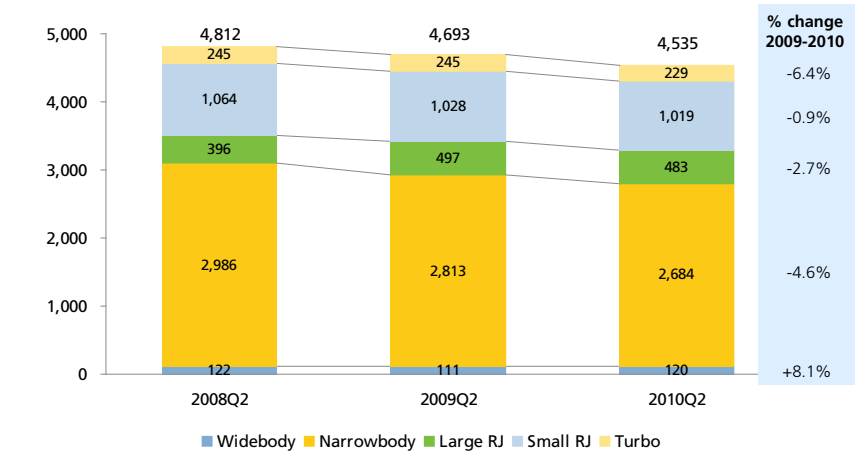
Exhibit 25: Change in scheduled domestic US ASMs (January 2009 – January 2011)



Source: PlaneStats.com schedule data for all carriers.

Another perspective on capacity in the US market is provided by the changing size and mix of the active commercial airline fleet. *Exhibit 26* shows that the number of active aircraft used in domestic service declined by 3.4% from Q2 2009 to Q2 1010, which follows a 2.5% decrease during the previous year. Surprisingly, the only aircraft category that grew between Q2 2009 and Q2 2010 is the widebody aircraft used in domestic service, with an 8.1% increase over a small base. The narrowbody fleet declined by 4.6%, and the aging turboprop fleet declined by 6.4% during this period.

Exhibit 26: Distribution of US carriers' aircraft (operated during period) in domestic service (2008 – 2010)

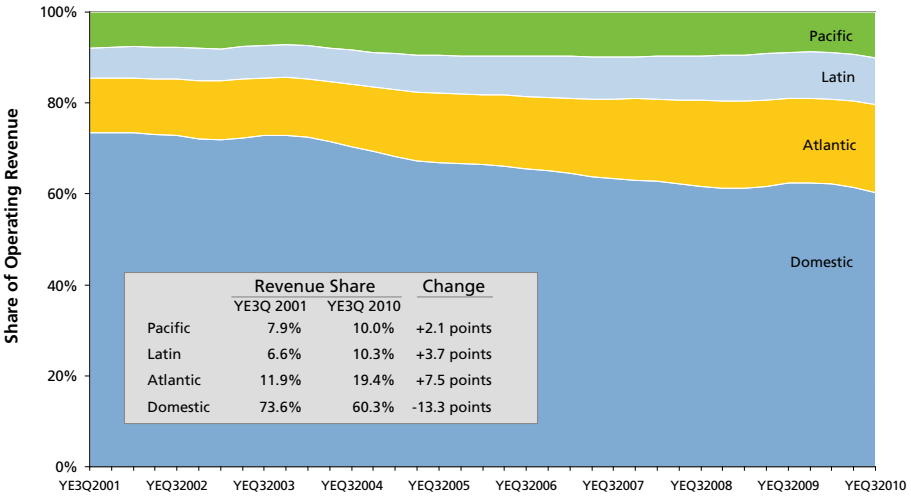


Source: PlaneStats.com advanced query > traffic report for all reporting passenger carriers.

15. International Versus Domestic Portion of US Market

US mainline carriers have continued to look overseas for revenue opportunities, with their domestic operations contributing less and less to their system revenue. *Exhibit 27* illustrates the long-term network carrier shift toward international service. The share of system revenue contributed by domestic operations dropped by 13 points between Q3 2001 and Q3 2010, from 73.6% to 60.3%. The trend continued this past year, as domestic revenue dropped from 62.3% to 60.3% of total network carrier revenue between Q3 2009 to Q3 2010. Total domestic and international revenue grew during this period, but international revenue grew much more rapidly.

Exhibit 27: US network carrier operating revenue by geographic area



	Revenue Share		Change
	YE3Q 2001	YE3Q 2010	
Pacific	7.9%	10.0%	+2.1 points
Latin	6.6%	10.3%	+3.7 points
Atlantic	11.9%	19.4%	+7.5 points
Domestic	73.6%	60.3%	-13.3 points

Source: PlaneStats.com advanced query > income statement for network carriers, mainline operations only.

Value carriers also are growing internationally, with the focus so far on Latin America. Although their share of ASMs devoted to domestic service remains very high at 95.5%, their share devoted to Latin America has grown from 1.7% in YEQ3 2008 to 2.9% the following year, and to 4.5% in YEQ3 2010. This trend is likely to continue and accelerate as Southwest, the largest US value carrier, acquires AirTran's international routes and develops its own international capabilities.

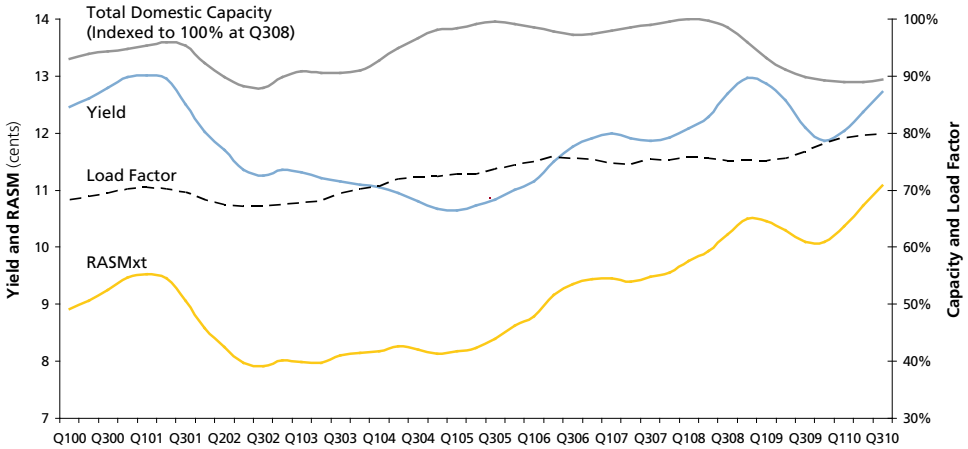
16. Revenue Drivers

The charts in *Exhibits 28, 29,* and *30* show the relationship between capacity changes, load factor, yield, and RASM over the past decade. In the basic micro-economic context of air travel, demand is very tightly linked with Gross Domestic Product growth. When airlines reduce capacity (supply) in the face of a downturn, or restrain capacity in the

face of even modest economic growth, they effectively push up load factors and/or yields.

The charts set the capacity index at a value of 100% when capacity is at its highest point. For the combined domestic network carrier and value carrier system-wide markets, that point occurred in YEQ1 2008, and compares to a value of about 93.1% for the YEQ1 2000. *Exhibit 28* below shows that domestic capacity bounced back from the post 9/11 recession to new highs by the middle of the decade and stayed on a plateau until 2008 before capacity dropped back to 2002 levels. Value carrier load factors have increased somewhat over the decade, particularly in the last three years as they finally reached the 80% mark for YEQ3 2010. RASM excluding transport revenue (labeled RASMxt), which excludes regionals, has increased significantly during the past year primarily as a result of increasing yield.

Exhibit 28: US value carriers' system revenue drivers



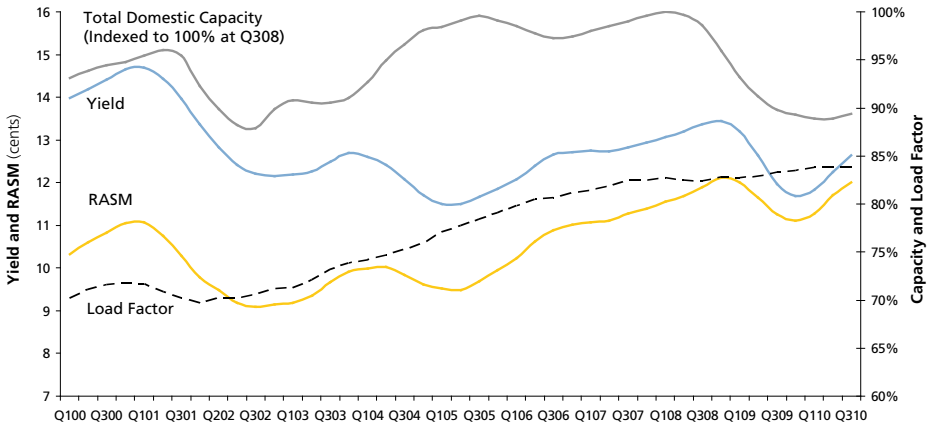
Source: PlaneStats.com advanced query > income statement for value carriers, systemwide, mainline operations only. Capacity based on total US domestic traffic.

Exhibit 29 shows network carriers with the same capacity line. It hides the dramatic 24.7% reduction of network carrier total domestic capacity over the past decade, which the value carriers largely backfilled. This capacity reduction by the network carriers has helped increase network carrier load factor from 71% to nearly 84% over the decade. Almost all of this load factor increase, however, occurred prior to 2008. Recent RASM increases have been supported by strict capacity controls, which have made yield increases possible.

An interesting phenomenon is the compression of the RASM and yield lines for network carriers. Traditionally, RASM equals yield times load factor, so the yield and RASM lines converge when load factor is 100% (generally considered impossible). Recently, the network carrier lines

have been compressing despite flat load factors because of "other revenue" such as fees. In a sense, as load factor has approached its theoretical maximum, fees have replaced it as a source of revenue growth.

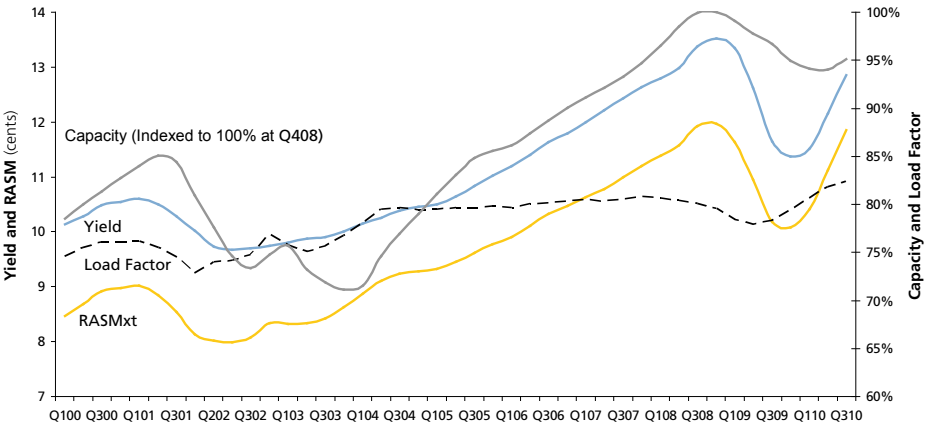
Exhibit 29: US Network carriers domestic revenue drivers



Source: PlaneStats.com advanced query > income statement for value carriers, systemwide, mainline operations only. Capacity based total US domestic traffic.

The network carriers have added substantial capacity for international service over the past decade, as seen in *Exhibit 30*. Load factors remained consistently high for most of the decade, while yields increased at a healthy rate, far in excess of domestic yields until late 2008. The subsequent drop in yields was accompanied by almost an equivalent drop in RASM during 2009. Flat to low capacity growth since the economic bottom has led to a nearly complete recovery in RASM by YEQ3 2010. With sufficient capacity discipline, airlines can have a "V" shaped recovery in prices and ultimately profits even if the economy doesn't.

Exhibit 30: US Network carriers' international revenue drivers

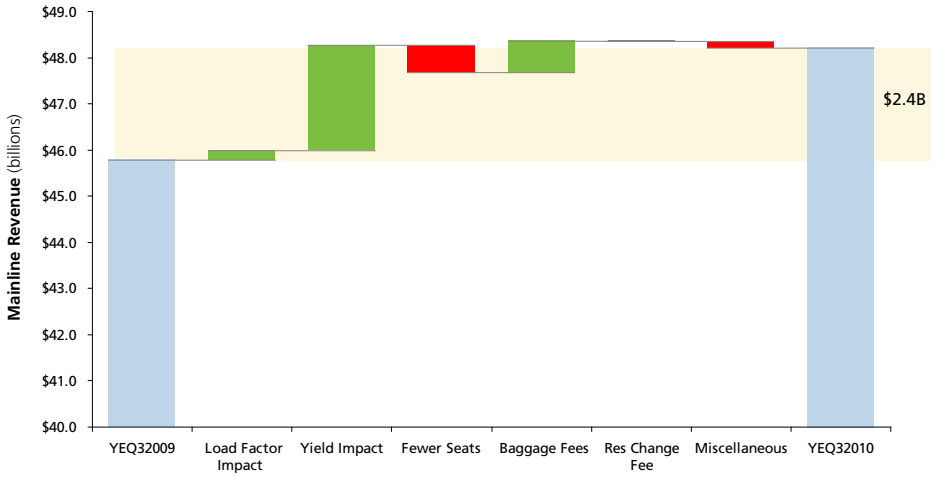


Source: PlaneStats.com advanced query > income statement for value carriers, systemwide, mainline operations only. Capacity US carrier international traffic.

Both the capacity discipline-driven price increases and dramatic increases in fee revenue have been credited for the rebound in airline revenue and profits. To identify the role played by each, we conducted a price and volume variance analysis to quantify the sources of revenue growth from Q3 2009 to Q3 2010, while controlling for changes in activity levels.

Exhibit 31 shows that the largest contributor to revenue growth over the past year has been the improvement in yield which accounts for 94% of revenue growth, while increased baggage fees account for 29%. The rest of the categories actually make a net negative contribution to bring the total back down to 100%.

Exhibit 31: Domestic Mainline revenue increase—price and volume drivers (YEQ3 2009 to YEQ3 2010)



Source: PlaneStats.com advanced query > income statement for network carriers, domestic, mainline operations only. Excludes transport revenue (regionals) and public service revenue.

International

17. Air Service Provided by Value Carriers Around the World

In the early years of the value carriers success in the US, it was common for pundits to say the model wouldn't work outside of the region. Today the penetration of value carriers varies by region, but there are value carriers firmly established in every single region. In *Exhibit 32*, we provide a comparison of the percentage of originating ASMs in each region provided by different carrier types (not just those provided by carriers based there).

As shown, the highest percentage of air service provided by value carriers is in Oceania, home to Virgin Blue, where 30.9% of ASMs are flown by value carriers. Central America, home to Volaris and Interjet, is second with 22.6% of ASMs flown by value carriers. The US follows at 20.0%, with Canada at 18.7% and Europe at 15.8%. The Middle East (4.2%) and South America (5.3%) have the lowest percentage of service provided by value carriers.

Exhibit 32: ASMs by airline type and country origin
(December 1–7, 2010)

	Network	Value	Scheduled Charter	Other*
Asia	86.0%	9.7%	0.7%	3.6%
US	79.6%	20.0%	0.2%	0.3%
Europe	76.4%	15.8%	2.7%	5.0%
Middle East	86.3%	4.2%	1.2%	8.2%
Oceania	64.0%	30.9%	0.1%	5.0%
S. America	87.7%	5.3%	0.7%	6.1%
Africa	80.7%	9.2%	1.8%	8.3%
Canada	75.8%	18.7%	1.5%	4.0%
C. America	70.3%	22.6%	3.4%	3.7%
Caribbean	76.3%	10.1%	10.4%	3.1%
Other	96.5%			3.5%

* Small regionally focused airlines that operate independently, as opposed to other, typically larger regionals included within the network carrier category
Source: PlaneStats.com schedule data for all carriers.

Exhibit 33 gives additional perspective on the size of air service markets and the top regions served from those markets. It lists the largest regions by originating ASMs, beginning with Asia, and then the largest regional destinations from each market. For example, in Asia, roughly 60% of originating ASMs are devoted to service to other points in Asia, 15% for service to Europe, and 8% to the US. In most regions, the largest regional destination is within the same region. In the Middle East, Africa, and the Caribbean, the largest regional destination for each is Europe.

The size and linkages between regions provide some insight into the potentially different strategic context and challenges for airlines of the same business model but based in different regions. For example, notwithstanding some long-haul innovators like Air Asia X, value carriers tend to fly narrowbody aircraft on short and medium-haul routes with an origin and a destination in the same region. So when a region has itself as the largest, concentrated destination, airlines in that region are

likely to have a large portion of their revenue exposed to value carrier pricing pressure. *Exhibit 33* shows that the US is the destination for 68% of capacity originating in the US, whereas Europe is the destination for 44% of capacity originating in Europe. Based on these differences, it is easy to see that value carriers represent a much larger threat to US-based network carriers than they do for network carriers based in Europe.

Likewise, Asia is the destination for 18% of capacity originating in Europe and 8% of US capacity. Apart from the numerical differences in capacity flowing to Asia, there are also important differences in the intermediate markets. While the US is separated from Asia by the Pacific Ocean, Europe is separated from Asia by the Middle East, whose largest destinations are Europe and Asia. In addition, Middle East carriers have potential connecting capacity equal to 50% of Europe-to-Asia capacity. In this situation, one can see how some European network carriers view the Middle Eastern carriers as a strategic threat, whereas they are more of a curiosity to network carriers in the US.

Exhibit 33: Regional distribution of originating ASMs
(December 1–10, 2010)

		Largest Destinations					
Origin	Total Originating ASMs (billions)	1st	% of Total ASMs	2nd	% of Total ASMs	3rd	% of Total ASMs
Asia	20.5	Asia	62%	Europe	15%	US	8%
US	18.7	US	68%	Europe	13%	Asia	8%
Europe	17.3	Europe	44%	Asia	18%	US	14%
Middle East	5.0	Asia	29%	Europe	27%	Middle East	21%
Oceania	3.9	Oceania	54%	Asia	30%	US	7%
S. America	3.6	S. America	59%	Europe	20%	US	13%
Africa	2.9	Europe	42%	Africa	32%	Middle East	14%
Canada	1.6	Canada	36%	US	18%	Europe	18%
C. America	1.2	C. America	36%	US	33%	Europe	15%
Carribean	0.7	Europe	54%	US	29%	Canada	6%
Other	3.3	Europe	67%	Other	31%	Canada	2%

Source: PlaneStats.com schedule data for all carriers.

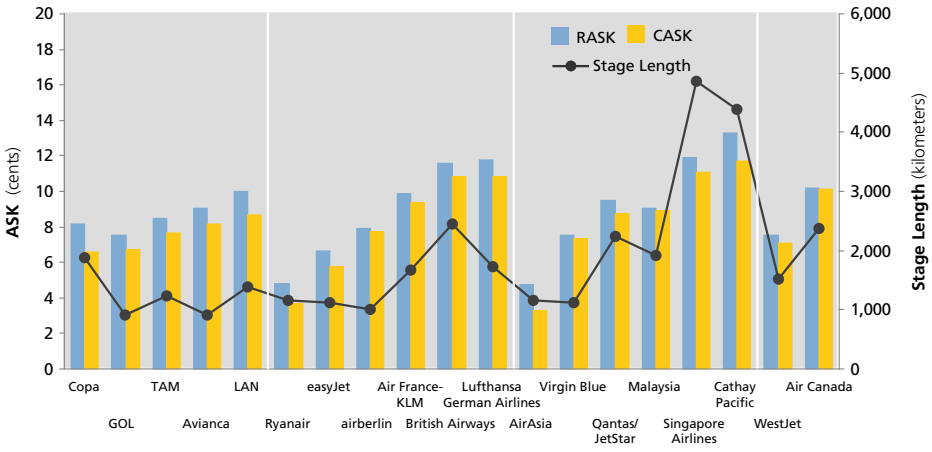
18. Stage Length Adjusted RASK and CASK for International Carriers

In *Exhibit 34*, RASK (kilometers instead of miles) and CASK are provided on a stage length adjusted basis for selected European, Asian, and South American carriers. The blue line shows the average stage length for each carrier. Because of differences in time period (e.g., fiscal years that end on different months), financial reporting conventions (group level vs. airline level), and other factors, this information is not directly comparable to that provided for US carriers. However, the cost

comparison (expressed in US Dollars converted at the end of each airline's reporting period) is useful in showing the relative differences in RASK/CASK between the carriers. Despite the data limitations, we can see that the phenomenon of value carriers having lower unit costs than their network carrier rivals is global. CASK gap differences across regions reflect the same variability that we see with US carriers. As in the past, Air Asia and Ryanair have by far the lowest CASK of any of the carriers. Additionally, as we see in the US, value carriers tend to have shorter stage lengths compared to the network carriers in their geography. This trend may begin to diminish as value carriers in Europe and Asia such as airberlin, Air Asia, and JetStar offer more widebody, long-haul operations.

The chart also illustrates a range of cost performances among value carriers, such as between Ryanair, easyJet, and airberlin in Europe, and Air Asia and Virgin Blue in Australasia. This is similar to the range of cost performance among US value carriers noted in section 5. While the European and Asian network carriers have much higher unit costs than their value carrier competitors, they all have a unit revenue premium that exceeds their cost base. This is remarkable given the high level of value carrier penetration in those regions. The smallest cost gap between "head to head" value and network carriers is between Virgin Blue and Qantas. Those carriers appear to be migrating their business models towards each other with Virgin Blue launching multi-class, long-haul widebody service under the V Australia brand and Qantas operating short and long-haul value carrier operations under the JetStar brand.

Exhibit 34: RASK/CASK for International carriers
stage length adjusted to 1,609 km (1,000 miles)



Note: Group level revenues and costs used for Avianca, LAN, AirFrance-KLM, British Airways, Malaysia Airlines, Cathay Pacific, and Singapore Airlines.

Source: McGraw-Hill Aviation Week Intelligence Network (AWIN)

Conclusion

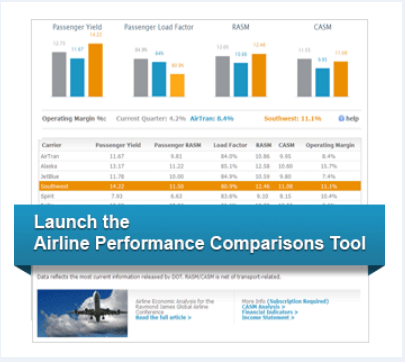
Airline performance in 2010 has far exceeded predictions made at the beginning of year. It has also provided support for those who have said that capacity discipline is the answer to many of the industry's economic woes. Flat to low capacity growth since the economic bottom has led to a nearly complete recovery in RASM by YEQ3 2010, showing that with sufficient capacity discipline, airlines can have a "V" shaped recovery in prices and, ultimately profits even if the economy doesn't. The recent success of this sustained level of capacity discipline, along with tight cost control, is likely to encourage airline executives to maintain this approach in the coming months. ❖

See how airlines stack up to each other

Visit PlaneStats.com to compare key performance statistics for the US airlines in this report.

The dynamic and interactive web tool allows users to quickly view passenger yield, passenger load factor, RASM and CASM data for the current period and highlight statistics of specific carriers.

For access please go to:
www.PlaneStats.com



OLIVER WYMAN

Oliver Wyman's global Aviation, Aerospace & Defense practice helps passenger and cargo carriers, OEM and parts manufacturers, aerospace/defense companies, airports, and MRO and other service providers develop value growth strategies, improve operations, and maximize organizational effectiveness. Our deep industry expertise and our specialized capabilities make us a leader in serving the needs of the industry. Also, Oliver Wyman offers a powerful suite of industry data and analytical tools to drive key business insights through www.planestats.com.

For more information on Oliver Wyman, please visit www.oliverwyman.com.

For more information on this report, please contact:

Robert Hazel
bob.hazel@oliverwyman.com
+1 703 773 3105

Aaron Taylor
aaron.taylor@oliverwyman.com
+1 631 745 6875

Andrew Watterson
andrew.watterson@oliverwyman.com
+1 214 758 1874

MMC A Marsh & McLennan Company