

2011

# Airport Benchmarking Report

Global Standards for Airport Excellence

## INFORMATION PACKAGE



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North America - United States			
Code	Airport Name	City, State	
1	ABQ	Albuquerque International Sunport	Albuquerque, New Mexico
2	ALB	Albany International Airport	Albany, New York
3	ATL	Hartsfield-Jackson Atlanta International Airport	Atlanta, Georgia
4	AUS	Austin Bergstrom Airport	Austin, Texas
5	BNA	Nashville International Airport	Nashville, Tennessee
6	BOS	Boston Logan International Airport	Boston, Massachusetts
7	BWI	Baltimore Washington International Airport	Baltimore, Maryland
8	CLE	Cleveland-Hopkins International Airport	Cleveland, Ohio
9	CLT	Charlotte Douglas International Airport	Charlotte, North Carolina
10	CVG	Cincinnati/Northern Kentucky International Airport	Cincinnati, Ohio
11	DCA	Ronald Reagan Washington National Airport	Washington, DC
12	DEN	Denver International Airport	Denver, Colorado
13	DFW	Dallas/Fort Worth International Airport	Dallas, Texas
14	DTW	Detroit Metropolitan Wayne County Airport	Detroit, Michigan
15	EWR	Newark Liberty International Airport	Newark, New Jersey
16	FLL	Fort Lauderdale Hollywood International Airport	Ft. Lauderdale, Florida
17	HNL	Honolulu International Airport	Honolulu, Hawaii
18	IAD	Washington Dulles International Airport	Washington, DC
19	IAH	Houston-Bush Intercontinental Airport	Houston, Texas
20	IND	Indianapolis International Airport	Indianapolis, Indiana
21	JAX	Jacksonville International Airport	Jacksonville, Florida
22	JFK	New York-John F. Kennedy International Airport	New York, New York
23	LAS	Las Vegas McCarran International Airport	Las Vegas, Nevada
24	LAX	Los Angeles International Airport	Los Angeles, California
25	LGA	LaGuardia International Airport	New York, New York
26	MCI	Kansas City International Airport	Kansas City, Missouri
27	MCO	Orlando International Airport	Orlando, Florida
28	MDW	Chicago Midway Airport	Chicago, Illinois
29	MEM	Memphis International Airport	Memphis, Tennessee
30	MIA	Miami International Airport	Miami, Florida
31	MKE	General Mitchell International Airport	Milwaukee, Wisconsin
32	MSP	Minneapolis/St. Paul International Airport	Minneapolis, Minnesota
33	MSY	Louis Armstrong New Orleans International Airport	New Orleans, Louisiana
34	OAK	Oakland International Airport	Oakland, California
35	ONT	Ontario International Airport	Ontario, California
36	ORD	Chicago O'Hare International Airport	Chicago, Illinois
37	PBI	Palm Beach International Airport	West Palm Beach, FL
38	PDX	Portland International Airport	Portland, Oregon
39	PHL	Philadelphia International Airport	Philadelphia, Pennsylvania
40	PHX	Phoenix Sky Harbor International Airport	Phoenix, Arizona
41	PIT	Pittsburgh International Airport	Pittsburgh, Pennsylvania
42	RDU	Raleigh-Durham International Airport	Raleigh, North Carolina
43	RIC	Richmond International Airport	Richmond, Virginia
44	RNO	Reno/Tahoe International Airport	Reno, Nevada
45	SAN	San Diego International Airport	San Diego, California
46	SAT	San Antonio International Airport	San Antonio, Texas
47	SDF	Louisville Intl-Standford Field	Louisville, Kentucky
48	SEA	Seattle-Tacoma International Airport	Seattle, Washington
49	SFO	San Francisco International Airport	San Francisco, California
50	SJC	Norman Y. Mineta San José International Airport	San José, California
51	SLC	Salt Lake City International Airport	Salt Lake City, Utah
52	SMF	Sacramento International Airport	Sacramento, California
53	SNA	John Wayne Orange County Airport	Costa Mesa, California
54	STL	St. Louis-Lambert International Airport	St. Louis, Missouri
55	TPA	Tampa International Airport	Tampa, Florida

North America - Canada			
Code	Airport Name	City, Province	
56	YEG	Edmonton International Airport	Edmonton, Alberta
57	YHZ	Halifax International Airport	Halifax, Nova Scotia
58	YOW	Ottawa International Airport	Ottawa, Ontario
59	YUL	Montréal-Pierre Elliott Trudeau International Airport	Montréal, Québec
60	YVR	Vancouver International Airport	Vancouver, British Columbia
61	YWG	Winnipeg International Airport	Winnipeg, Manitoba
62	YYC	Calgary International Airport	Calgary, Alberta
63	YYZ	Toronto Lester B. Pearson International Airport	Toronto, Ontario

Latin America			
Code	Airport Name	City, Country	
64	BSB	Brasilia International Airport	Brasilia, Brazil
65	CGH	Congonhas/São Paulo International Airport	São Paulo, Brazil
66	EZE	Ministro Pistarini International Airport	Buenos Aires, Argentina
67	GIG	Rio de Janeiro/Galeão - Antonio Carlos Jobim International Airport	Rio de Janeiro, Brazil
68	GRU	São Paulo/Guarulhos-Governador Andre Franco Montoro International Airport	São Paulo, Brazil
69	NAS	Nassau/Lynden Pindling International Airport	Nassau, Bahamas
70	SCL	Santiago/Pudahuel/Comodoro Arturo Merino Benítez International Airport	Pudahuel, Chile

Europe			
Airport Code	Airport Name	City, Country	
71	AMS	Amsterdam Schiphol International Airport	Amsterdam, Netherlands
72	ARN	Stockholm Arlanda International Airport	Stockholm, Sweden
73	ATH	Athens International Airport	Athens, Greece
74	BCN	Barcelona El Prat Airport	Barcelona, Spain
75	BEG	Belgrade Nikola Tesla Airport	Belgrade, Serbia
76	BHX	Birmingham International Airport	Birmingham, England
77	BRU	Brussels International Airport	Brussels, Belgium
78	BUD	Budapest Ferihegy International Airport	Budapest, Hungary
79	BTS	Bratislava Milan Rastislav Stefanik Airport	Bratislava, Slovakia
80	CDG	Paris Charles de Gaulle International Airport	Paris, France
81	CGN	Cologne/Bonn Konrad Adenauer International Airport	Cologne, Germany
82	CIA	Rome Ciampino Airport	Rome, Italy
83	CPH	Copenhagen Kastrup International Airport	Copenhagen, Denmark
84	CRL	Brussels South Charleroi Airport	Brussels, Belgium
85	DUB	Dublin International Airport	Dublin, Ireland
86	DUS	Flughafen Dusseldorf International Airport	Dusseldorf, Germany
87	EDI	Edinburgh Airport	Edinburgh, Scotland
88	FCO	Rome Leonardo Da Vinci/Fiumicino Airport	Rome, Italy
89	FRA	Frankfurt Main International Airport	Frankfurt, Germany
90	GVA	Geneva Cointrin International Airport	Geneva, Switzerland
91	HAM	Hamburg International Airport	Hamburg, Germany
92	HEL	Helsinki Vantaa International Airport	Helsinki, Finland
93	ISG	Istanbul Sabiha Gokcen Airport	Istanbul, Turkey
94	IST	Istanbul Ataturk International Airport	Istanbul, Turkey
95	KEF	Keflavik International Airport	Reykjavik, Iceland
96	LGW	London Gatwick International Airport	London, England
97	LHR	London Heathrow International Airport	London, England
98	LIS	Lisbon Portela Airport	Lisbon, Portugal
99	LJU	Ljubljana Airport	Ljubljana, Slovenia
100	MAD	Madrid Barajas International Airport	Madrid, Spain
101	MAN	Manchester International Airport	Manchester, England
102	MLA	Malta International Airport	Valletta, Malta
103	MUC	Munich International Airport	Munich, Germany
104	MPX	Milan Malpensa International Airport	Milan, Italy
105	ORY	Paris Orly Airport	Paris, France
106	OSL	Oslo Airport	Oslo, Norway
107	PRG	Prague International Airport	Prague, Czech Republic
108	RIX	Riga International Airport	Riga, Latvia
109	SOF	Sofia International Airport	Sofia, Bulgaria
110	STN	London Stansted Airport	London, England
111	TLL	Lennart Meri Tallin Airport	Tallinn, Estonia
112	TLV	Ben Gurion International Airport	Tel Aviv, Israel
113	TXL	Berlin Tegel Airport	Berlin, Germany
114	VIE	Vienna International Airport	Vienna, Austria
115	WAW	Warsaw Chopin Airport	Warsaw, Poland
116	ZRH	Zurich International Airport	Zurich, Switzerland

Major Airport Authorities - Europe		
Airport Code	Authority Name	Country
ADP	Aeroports de Paris	France
ADR	Aeroporti di Roma	Italy
AENA	Aeropuertos Espanoles y Navegacion Aerea	Spain
ANA	Aeropostos de Portugal	Portugal
BAA	British Airport Authority	United Kingdom
Berlin	Berlin Airports	Germany
DAA	Dublin Airport Authority	Ireland
Finavia	Finavia Oyj	Finland
Fraport	Fraport AG	Germany
MAG	Manchester Airports Group	United Kingdom
PPL	Polish Airports State Enterprise	Poland
Schiphol	Schiphol Group	Dutch
Swedavia	Swedavia*	Sweden
TAV	TAV Airports Holding	Turkey

Major Airport Authorities - Asia Pacific		
Code	Authority Name	Country
AAI	Airports Authority of India	India
AOT	Airports of Thailand Public Company Limited	Thailand
APII	P.T. (Persero) Angkasa Pura II	Indonesia
MAHB	Malaysia Airports Holding Behard	Malaysia
SAA	Shanghai Airport Authority	China

Asia Pacific		
Code	Airport Name	City, Country
116	ADL Adelaide International Airport	Adelaide, Australia
117	AKL Auckland International Airport	Auckland, New Zealand
118	BKK Bangkok International Airport	Bangkok, Thailand
119	BNE Brisbane Airport	Brisbane, Australia
120	BOM Chhatrapati Shivaji International Airport	Mumbai, India
121	CAN Bai Yun Airport	Guangzhou, China
122	CEI Chiang Rai International Airport	Thailand
123	CGK Jakarta Soekarno-Hatta International Airport	Jakarta, Indonesia
124	CHC Christchurch International Airport	Christchurch, New Zealand
125	CNS Cairns International Airport	Cairns, Australia
126	CNX Chiang Mai International Airport	Chiang Mai, Thailand
127	DEL Indira Gandhi International Airport	New Delhi, India
128	DXB Dubai International Airport	Dubai, UAE
129	HAK Meilan International Airport	Haikou, China
130	HDY Hat Yai International Airport	Hat Yai, Thailand
131	HKG Hong Kong International Airport	Hong Kong, Hong Kong
132	HKT Phuket International Airport	Phuket, Thailand
133	HND Tokyo Internationa Airport	Tokyo, Japan
134	ICN Incheon International Airport	Seoul, Korea
135	KIX Kansai International Airport	Osaka, Japan
136	KUL Kuala Lumpur International Airport	Kuala Lumpur, Malaysia
137	MAA Chennai International Airport	Chennai, India
138	MEL Melbourne Tullamarine International Airport	Melbourne, Australia
139	MFM Macau International Airport	Macau
140	MNL Ninoy Aquino International Airport	Manila, Philippines
141	NGO Central Japan International Airport	Nagoya, Japan
142	NRT Tokyo Narita International Airport	Tokyo, Japan
143	PEK Beijing Capital International Airport	Beijing, China
144	PEN Penang International Airport	Penang, Malaysia
145	PER Perth International Airport	Perth, Australia
146	PNH Phnom Penh International Airport	Phnom Penh, Cambodia
147	PVG Shanghai Pudong International Airport	Shanghai, China
148	REP Siem Reap International Airport	Siem Reap, Cambodia
149	SEL Seoul Gimpo International Airport	Seoul, South Korea
150	SHA Shanghai Hongqiao International Airport	Shanghai, China
151	SIN Singapore Changi International Airport*	Singapore, Singapore
152	SYD Sydney Kingsford Smith International Airport	Sydney, Australia
153	SZX Shenzhen Baoan International Airport	Shenzhen, China
154	TPE Taiwan Taoyuan International Airport	Taipei, Taiwan
155	WLG Wellington International Airport	Wellington, New Zealand
156	XMN Xiamen Gaoqi International Airport	Xiamen, China

### The ATRS Benchmarking Report consists of three parts:

- **Part I** provides a summary of the research approach and key results. It contains 9 summary tables and 9 summary charts covering the main aspects of airport operations and management, including labour productivity, soft cost input productivity, residual variable factor productivity, and revenue generation.
- **Part II** is the main body of the report. It provides over 200 charts and tables comparing most dimensions of airport performance across airports. It also provides comparisons of the status of the airports in terms of traffic volume, number of employees and terminal-airside capacity. A comparison of airport charges including landing and passenger charges is also presented.
- **Part III** provides one-page profiles for the 156 airports and 19 airport groups/authorities included in the report. It also provides descriptions of the methodology and sources of data and information.

## In the 2011 Report



## THE REPORT

The main objective of this report is to measure and compare the performance of several important aspects of airport operation including:

- **Productivity and Efficiency**
- **Unit Costs and Unit Competitiveness**
- **Financial Results**
- **Airport Charges**

The report also examines the relationship between various performance measures and airport characteristics in order to better explain the differences in airport performance.

## PRODUCTIVITY AND EFFICIENCY

The report measures and compares a number of partial measures of productivity including labour productivity, capital productivity, and “soft cost input” productivity. These include the typical partial performers such as passengers per employee, passengers per gate etc.

In addition, this report introduces a number of new partial productivity measures including the “soft cost input” productivity. “Soft cost input” productivity, a measure unique to the ATRS Benchmarking Report, is a catch-all input which includes all expenses other than labour and capital and is used primarily to take into account the cost of buying in outsourced services. The soft cost input account for and average 64% of an airports non-capital expenditures, as such, it is extremely important to consider this soft cost in examining airport performance.

## UNIT COST AND UNIT COMPETITIVENESS

The report presents a number of unit cost measures. These include measures such as labour cost per passenger, labour cost per aircraft movement, etc. A unit cost index provides a means by which to examine the relationship to various airport characteristics and airport service levels.

## FINANCIAL RESULTS

The report presents a number of revenue generation indicators and common financial ratios, including aeronautical revenue per aircraft movement, total revenue per passenger, return on equity, current ratio, return on asset, etc. A yield for total revenue per unit of output is also provided as an overall revenue generation indicator.

## AIRPORT CHARGES

One means for airports to derive revenues is through charges associated with aeronautical activities. Aeronautical charges are levied for the use of an airport’s runway, apron and terminal facilities. Landing charges, typically based on the weight of the aircraft, and terminal (Passenger) charges, generally levied on the number of passengers at time of departure, are compared in the report. Three types of aircraft reflecting different aircraft weight classes are considered: **Boeing 747-400, Airbus 321, and CRJ 200**. A breakdown of landing charges by weight categories and passenger charges by boarding passenger is also included.

## AIRPORT DESCRIPTIONS

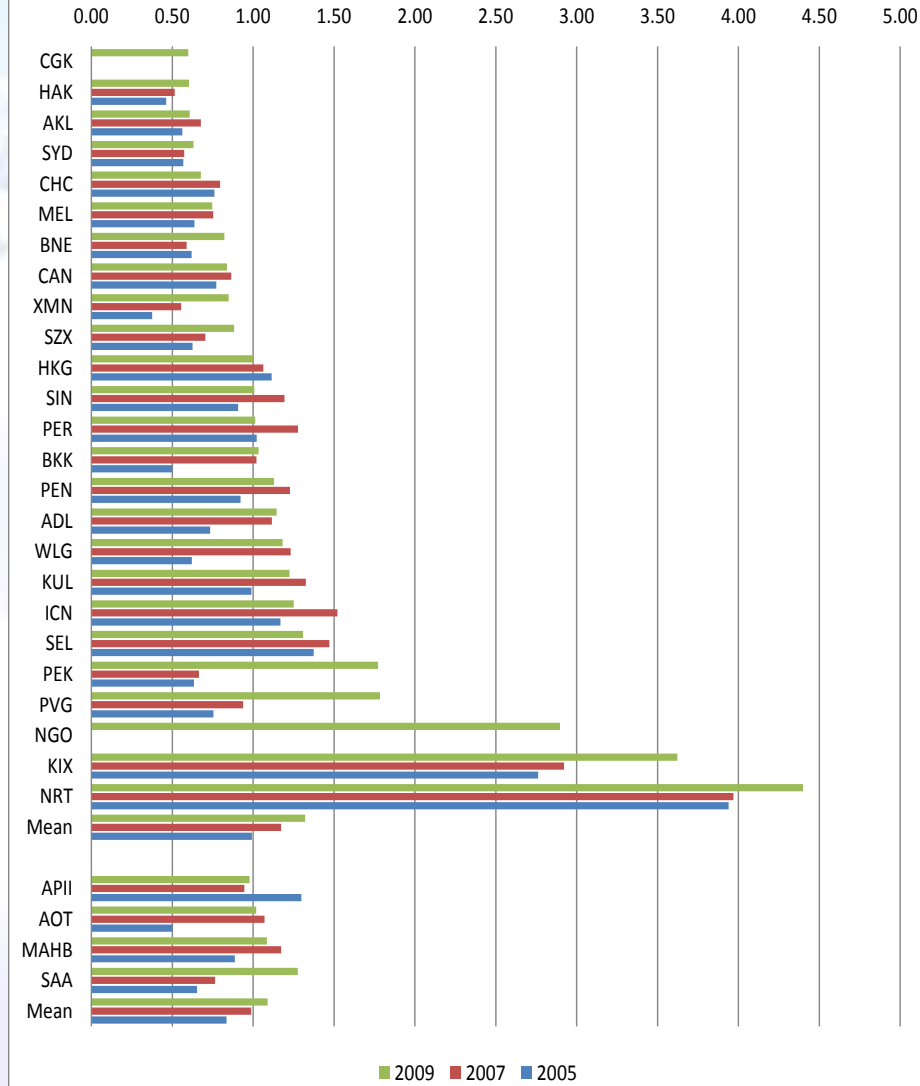
Part III of the report presents a short description of each airport including a section on new development and on recent awards. It also includes information on capacity and traffic (with time series data) as well as highlights of the current revenue, and profit margin. In addition, a summary of the airport charges is also included.

## NEW IN THE 2011 ISSUE

- 14 new airports are included in the sample.
- Cost per enplanement (CPE) of the North American Airports
- Comparison of residual variable factor productivity ratios and airport charges in the past 5 years.

## 5.2.7c Unit Variable Cost Index – Asia Pacific

**Figure 5.2.7c Unit Variable Cost Index  
(2005/07/09) - Asia Pacific  
HKG=1.0**



Airport	2001	2002	2003	2004	2005	2006	2007	2008	2009	% Change 08-09	% Change 05-09
CGK	-	-	-	-	-	-	-	-	0.60	-	-
HAK	-	-	-	0.43	0.46	0.60	0.51	0.70	0.60	-13.54%	30.75%
AKL	0.37	0.35	0.42	0.50	0.56	0.55	0.68	0.61	0.61	-0.48%	7.97%
SYD	0.59	0.50	0.50	0.58	0.57	0.59	0.57	0.63	0.63	-0.49%	11.07%
CHC	0.39	0.36	0.55	0.71	0.76	0.80	0.80	0.78	0.68	-12.64%	-10.97%
MEL	0.32	0.33	0.46	0.57	0.64	0.66	0.75	0.82	0.75	-8.90%	17.28%
BNE	0.33	0.34	0.43	0.54	0.62	0.53	0.59	0.73	0.82	13.06%	32.56%
CAN	-	0.72	0.74	0.77	0.77	0.79	0.86	1.01	0.84	-17.11%	8.52%
XMN	0.76	0.39	0.42	0.37	0.38	0.36	0.55	0.75	0.85	13.65%	126.95%
SZX	0.00	0.68	0.60	0.63	0.63	0.68	0.70	0.85	0.88	3.36%	41.10%
HKG	1.54	1.51	1.58	1.26	1.11	1.11	1.06	1.07	1.00	-6.47%	-10.21%
SIN	0.82	0.81	0.97	0.93	0.91	0.97	1.19	1.28	1.01	-21.57%	11.03%
PER	0.46	0.52	0.64	0.81	1.02	1.12	1.28	0.95	1.01	6.72%	-0.85%
BKK	0.34	0.35	0.45	0.44	0.50	0.73	1.02	1.13	1.03	-8.65%	107.27%
PEN	0.67	0.95	0.94	0.91	0.92	1.06	1.23	1.53	1.13	-25.96%	22.41%
ADL	0.00	0.46	0.53	0.64	0.73	0.89	1.12	1.22	1.14	-6.36%	56.06%
WLG	0.29	0.31	0.38	0.45	0.62	1.14	1.23	1.27	1.18	-7.12%	90.36%
KUL	0.87	1.03	1.01	0.96	0.99	1.13	1.33	1.30	1.22	-5.59%	23.67%
ICN	-	-	1.09	1.07	1.17	1.36	1.52	1.38	1.25	-9.43%	6.98%
SEL	0.81	1.08	0.94	1.07	1.37	1.42	1.47	1.39	1.31	-5.90%	-4.86%
PEK	0.57	0.58	0.70	0.72	0.63	0.56	0.66	1.71	1.77	3.67%	179.84%
PVG	-	-	-	-	0.75	0.90	0.94	1.26	1.78	41.60%	136.45%
NGO	-	-	-	-	-	-	-	-	2.90	-	-
KIX	2.97	2.46	2.64	2.70	2.76	2.95	2.92	3.38	3.62	7.07%	31.15%
NRT	5.13	4.24	3.83	3.83	3.94	4.04	3.97	4.28	4.40	2.75%	11.65%
<b>Mean</b>	<b>0.91</b>	<b>0.90</b>	<b>0.94</b>	<b>0.95</b>	<b>0.99</b>	<b>1.08</b>	<b>1.17</b>	<b>1.31</b>	<b>1.32</b>	<b>-2.54%</b>	<b>40.23%</b>

APII	-	-	-	1.37	1.30	1.58	0.94	0.76	0.98	28.23%	-24.68%
AOT	0.35	0.37	0.46	0.44	0.50	0.71	1.07	1.11	1.02	-8.04%	103.14%
MAHB	0.80	0.93	0.90	0.86	0.89	1.00	1.17	1.25	1.08	-13.34%	22.34%
SAA	0.65	0.68	0.78	0.60	0.65	0.75	0.76	1.23	1.28	3.72%	95.53%
<b>Mean</b>	<b>0.60</b>	<b>0.66</b>	<b>0.71</b>	<b>0.82</b>	<b>0.83</b>	<b>1.01</b>	<b>0.99</b>	<b>1.09</b>	<b>1.09</b>	<b>2.64%</b>	<b>49.08%</b>

Figure 6.1.1a: Aeronautical Revenue Share (2009) - North America

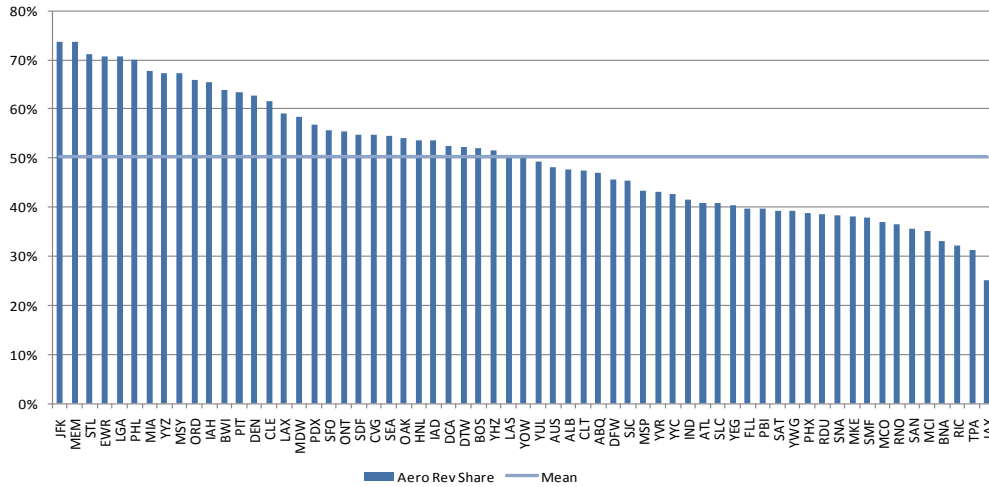
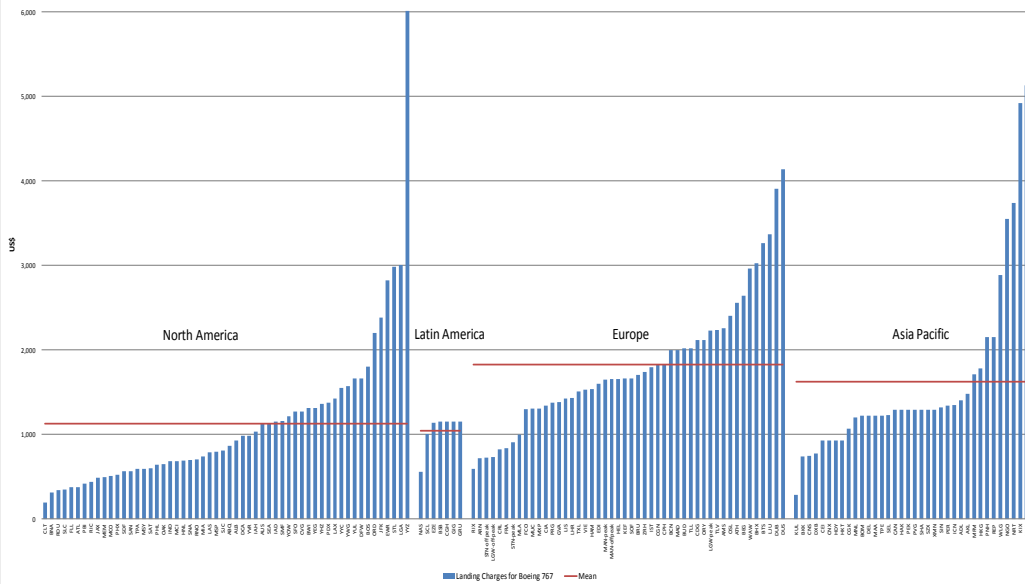


Figure S-8a Landing Charges for Boeing 767, 2010

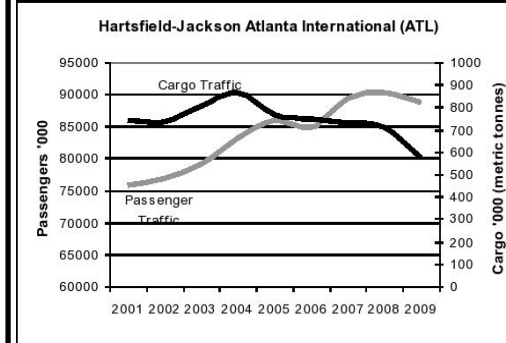


## Hartsfield-Jackson Atlanta International Airport ATL

Atlanta, Georgia Fiscal Year-End: June 30<sup>th</sup>, 2009

### Ownership & Management

Hartsfield-Jackson Atlanta International Airport is owned by the City of Atlanta and operated by its Department of Aviation. A management company operates and manages the terminal activities; the Central Passenger Terminal Complex (CPTC) lease stipulates that the signatory airlines are responsible for maintaining and operating the passenger terminal buildings. The signatory airlines contract out maintenance and operation services to a third-party provider (a company primarily owned by the signatory airlines, with the city of Atlanta having a 7% share in the company). The City of Atlanta and the Department of Aviation are thus responsible for long-term strategic planning, including capital investment decisions.



Capacity	
Runways	5
Terminal Size (m <sup>2</sup> )	538,837
Gates	186
Employees	618
Traffic	
% International PAX	10%
% Transfer/Connecting	68%
Dominant Carrier	Delta Airlines
% of Dominant Carrier	41%
Passengers/Movement	93

	2003	2005	2007	2009	2009
<b>Air Movements</b>	898,488	967,714	981,402	957,860	Total Operating Revenue \$394,336,444
					% Aeronautical Revenue 41%
					% Concession Revenue 27%
<b>Passengers (000's)</b>	79,087	85,907	89,379	88,649	Net Operating Income \$215,773,444
					Passenger Facility Charges (PFC) \$166,911,292
					Operating Margin 55%
<b>Cargo (metric tons)</b>	800,820	767,897	730,730	571,255	Movements per Day 2624
					Daily Gate Utilization (PAX) 1306

### Fee Structure:

Fees as of Jan 2010:

- **Landing Charge per 1000 lbs MGLW:** Signatory (\$1.07034), Non-Signatory (\$1.52)
- **Terminal Charge:** CPTC Lease Rate ranges from \$7.08-\$34.10, 30-day rate ranges from \$11.25-\$32.50 depending type of area
- **Concourse Charge:** CPTC Lease Rate ranges from \$2.49-\$17.28, 30-day Rate ranges from \$11.25-\$21.75
- **Apron Charge:** CPTC Lease Rate: \$1.12, 30-Day Rate: \$1.50
- **Ticket Counter Charge:** \$12.56/hr, **Baggage Claim Charge:** \$2.05/bag
- **Passenger Charge:** \$1.42 per passenger each way

### Notes and Observations:

- In Jan 2009, ATL retains title of world's busiest airport.
- The Maynard Holbrook Jackson, Jr. International Terminal which began in summer 2008 is scheduled to be completed in spring 2012 and will provide 12 additional gates.
- In Dec 2009, ATL opened a rental car center and associated people mover.
- 90 new shops opened between fall 2008 and Dec 2009 as part of a major concessions initiative. This won the airport several awards in 2009.
- ATL was the first US airport to be named *Air Cargo Week's* Airport of the Year. It also received *Air Cargo World's* Awards of Excellence.

## Airport Benchmarking Report 2011

### Part II. Analysis and Full Results

1. Background	1-1
1.1 Objective	1-1
1.2 Approach and Scope	1-1
2. Sample Airports	2-1
3. Airport Capacity and Traffic Volume	3-1
3.1 Airside Capacity	3-2
3.2 Terminal-side Capacity	3-6
3.2.1 Number of Gates	3-6
3.2.2 Terminal Size	3-9
3.3 Number of Employees	3-12
3.4 Traffic Volume	3-15
3.4.1 Passenger Traffic	3-15
3.4.2 Cargo Traffic	3-26
3.4.3 Work Load Unit	3-30
3.4.4 Aircraft Movement	3-34
3.4.5 Passengers per Aircraft Movement	3-38
3.5 Market Share of Dominant Hub Carrier	3-42
4. Airport Productivity and Efficiency Performance	4-1
4.1 Output and Inputs	4-1
4.2 Partial Productivity Measures	4-11
4.2.1 Labor Productivity	4-11
4.2.1.1 Number of Passengers per Employee	4-12
4.2.1.2 Aircraft Movements per Employee	4-16
4.2.1.3 Work Load Unit per Employee	4-20
4.2.1.4 Overall Labor Productivity	4-24
4.2.2 Capital Productivity	4-28
4.2.2.1 Passengers per Gate	4-28
4.2.2.2 Passengers per Square Meter of Terminal Space	4-32
4.2.2.3 Aircraft Movement per Runway	4-36
4.2.3 Productivity of Soft Cost Input	4-40
4.2.3.1 Soft Cost Input Productivity with Passengers as Output	4-40
4.2.3.2 Soft Cost Input Productivity-Overall Output Index	4-44
4.3 Variable Factor Productivity	4-48
4.4 Factors Affecting Productivity	4-53
4.4.1 Labour Productivity and Airport Size	4-53
4.4.2 Labour Productivity vs. International Traffic	4-54
4.4.3 Labour Productivity vs. Cargo Traffic	4-55
4.4.4 Capital Productivity vs. Airport Size	4-56
4.4.5 Capital Productivity vs. International Traffic	4-58
4.4.6 Soft Cost Input Productivity vs. Airport Size	4-60
4.4.7 Soft Cost Input Productivity vs. Share of International Traffic	4-61
4.4.8 Variable Factor Productivity vs. Airport Characteristics	4-62
4.5 Variable Factor Productivity Decomposition and Productive Efficiency	4-66
4.5.1 VFP Regression	4-69
4.5.2 Residual Variable Factor Productivity	4-73
Appendix 4A Comparison of VFP and Stochastic Cost Frontier	4-82

4A.1 Stochastic Cost Frontier Function Estimation	4-82
4A.2 Comparison of Residual VFP and Cost Frontier Results	4-89
5. Airport Cost Performance	5-1
5.1 Airport Cost Structure	5-2
5.1.1 Labour Cost Share	5-2
5.1.2 Soft Cost Shares	5-6
5.2 Unit Cost	5-7
5.2.1 Labour Cost per Passenger	5-7
5.2.2 Labour Cost per Aircraft Movement	5-11
5.2.3 Labour Cost per Work Load Unit	5-15
5.2.4 Variable Cost per Passenger	5-19
5.2.5 Variable Cost per Aircraft Movement	5-23
5.2.6 Variable Cost per Work Load Unit	5-27
5.2.7 Unit Variable Cost Index	5-31
5.3 Factors Affecting Unit Costs	5-35
5.3.1 Input Prices	5-35
5.3.1.1 Average Annual Employee Compensation	5-36
5.3.1.2 Variable Input Price Index	5-40
5.3.2 Unit Variable Cost vs. Labour Price	5-44
5.3.3 Unit Variable Cost vs. Airport Size	5-45
5.3.4 Unit Variable Cost vs. Airport Characteristics	5-46
5.4 Cost Competitiveness	5-48
6. Airport Financial Performance	6-1
6.1 Revenue Shares	6-1
6.1.1 Aeronautical Revenue Share	6-2
6.1.2 Concession Revenue Share	6-5
6.1.3 Parking Revenue Share	6-8
6.2 Revenue Generation	6-11
6.2.1 Aeronautical Revenue per Aircraft Movement	6-11
6.2.2 Concession Revenue per Passenger	6-14
6.2.3 Operating Revenue per Passenger	6-17
6.2.4 Operating Revenue per Aircraft Movement	6-20
6.2.5 Operating Revenue per Work Load Unit	6-23
6.2.6 Operating Revenue per Employee	6-26
6.3 Financial Profitability	6-29
6.3.1 Net Operating Income	6-29
6.3.2 EBITDA	6-35
6.3.3 Operating Margin	6-41
6.3.4 Current Ratio	6-47
6.3.5 Return on Asset	6-53
6.3.6 Return on Equity	6-59
6.3.7 Debt-Asset Ratio	6-66
6.3.8 Debt-Equity Ratio	6-72
7. Airport Rate and Charges	7-1
7.1 Landing Charges	7-2
7.2 Terminal (Passenger) Charges	7-22
7.3 Combined Landing and Passenger Charges	7-36
7.4 Cost per Enplaned Passenger	7-37
7.5 Air Travel Security Charges	7-38
7.6 Other Airport Charges	7-44



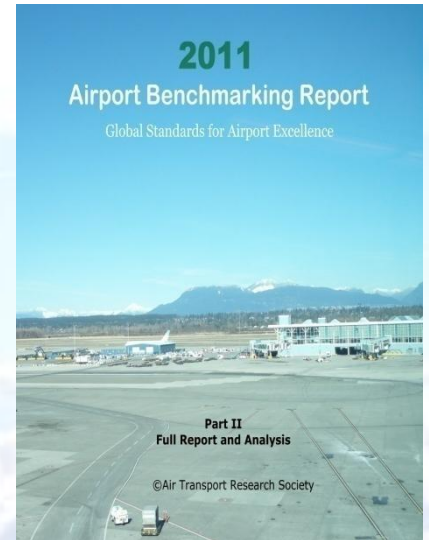
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