

Forecasting at The Port Authority Airports JFK LGA EWR

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THE PORT AUTHORITY
OF NEW YORK & NEW JERSEY

What is the Port Authority of NY & NJ

Established by Congressional Act in 1921

Mission: Identify & meet the transportation infrastructure needs of New York and New Jersey

Manages & maintains the Bridges, Tunnels, Bus Terminal, Airports, PATH train, and Seaports that are critical to NY& NJ's trade and transportation capabilities.

Port Authority Facilities

Bridges & Tunnels



Bus Terminal



Airports



JFK, LGA, EWR, TEB

Seaport



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Brief Demographic Profile of PA Airports

| | JFK | LGA | EWR |
|---|--------|---------|---------|
| Domestic Pax share | 54% | 95% | 72% |
| International Pax Share | 46% | 5% | 28% |
| O&D Passengers | 72% | 87% | 69% |
| Connecting Passengers | 28% | 13% | 31% |
| Business | 26% | 39% | 36% |
| Leisure | 74% | 61% | 64% |
| Originating Pax NY | 62% | 82% | 20% |
| Originating Pax NJ | 5% | 4% | 49% |
| Originating Other U.S. | 15% | 6% | 16% |
| Outside U.S. | 13% | 2% | 10% |
| # of Airlines | 101 | 17 | 49 |
| # of Domestic Cities Served | 65 | 81 | 91 |
| # of International Cities Served | 107 | 7 | 84 |
| # Daily Departing Dom Flights | 389 | 499 | 456 |
| # Daily Departing Int'l Flights | 163 | 30 | 105 |
| Mean Income of Pax (\$000s) | \$94.9 | \$105.9 | \$103.3 |



HISTORICAL PROFILE: TOP 5 CARRIERS 1986 & 2006

| REGION 1986 | |
|----------------|-----------|
| Airline | Share (%) |
| PEOPLE EXPRESS | 16.2% |
| EASTERN | 14.7% |
| AMERICAN | 9.7% |
| TWA | 8.2% |
| PAN AM | 7.4% |
| Total Top 5 | 56.3% |

| REGION 2006 | |
|-------------|-----------|
| Airline | Share (%) |
| CONTINENTAL | 24.5% |
| AMERICAN | 16.0% |
| DELTA | 13.2% |
| JETBLUE | 13.0% |
| US AIRWAYS | 4.7% |
| Total Top 5 | 71.3% |

| EWR 1986 | |
|----------------|-----------|
| Airline | Share (%) |
| PEOPLE EXPRESS | 41.8% |
| EASTERN | 10.7% |
| PIEDMONT | 10.0% |
| UNITED | 6.6% |
| NEW YORK AIR | 5.7% |
| Total Top 5 | 74.8% |

| EWR 2006 | |
|-------------|-----------|
| Airline | Share (%) |
| CONTINENTAL | 67% |
| AMERICAN | 5% |
| UNITED | 3% |
| JETBLUE | 3% |
| DELTA | 3% |
| Total Top 5 | 82% |

| JFK 1986 | |
|-------------|-----------|
| Airline | Share (%) |
| PAN AM | 19% |
| TWA | 19% |
| AMERICAN | 12% |
| EASTERN | 8% |
| UNITED | 4% |
| Total Top 5 | 62% |

| JFK 2006 | |
|-----------------|-----------|
| Airline | Share (%) |
| JETBLUE | 27% |
| AMERICAN | 20% |
| DELTA | 17% |
| BRITISH AIRWAYS | 3% |
| UNITED | 3% |
| Total Top 5 | 70% |

- Significantly different top 5 profile between 1986 and 2006.
- Long term forecast focuses on the underlying demand not individual airlines
- As long as demand exist a carrier will emerge to serve the market



PA'S FORECAST METHODOLOGY

TOP DOWN MODEL

REGION [JFK +LGA + EWR]

DOMESTIC

$$\text{Dom} = f(\text{USGDP}_{-1}, \text{YLD}, D_{78}, D_{2001})$$

AIRPORT DISTRIBUTION

JFK LGA EWR

Distribution is based on:

- Historical Market Shares
- Airport Specific Development
- Carrier Plans
- Advance Airlines Schedules
- Catchment area demographics

TERMINAL DISTRIBUTION

JFK 8-Term
LGA 4-Term
EWR 3-Term

INTERNATIONAL

$$\text{USRES} = f(\text{USGDP}_{-1}, \text{YLD}, \text{TDEX}, D_{2001})$$

$$\text{NONRES} = f(\text{W.EUROPEGDP}_{-1}, \text{YLD}, \text{TDEX}, D_{2001})$$

AIRPORT DISTRIBUTION

JFK LGA EWR

TERMINAL DISTRIBUTION

JFK 8-Term
LGA 4-Term
EWR 3-Term

Domestic Model Specification.

$$\text{Log Pax}_{t+1} = \phi_0 + \phi_1 \text{Log RealGDP}(t-1) - \phi_2 \text{Log Real Yield} + D_{1978} + D_{2001} + E_t$$

Where ϕ_1 and ϕ_2 are income and price elasticities, respectively



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DATA SOURCES & ASSUMPTIONS UNDERPINNING THE FORECAST

USGDP, Global GDP, & W.EUROPE GDP from Global Insight
NY & US Residential data and Non-Residential data from INS
sources.

Yield Forecast from FAA.

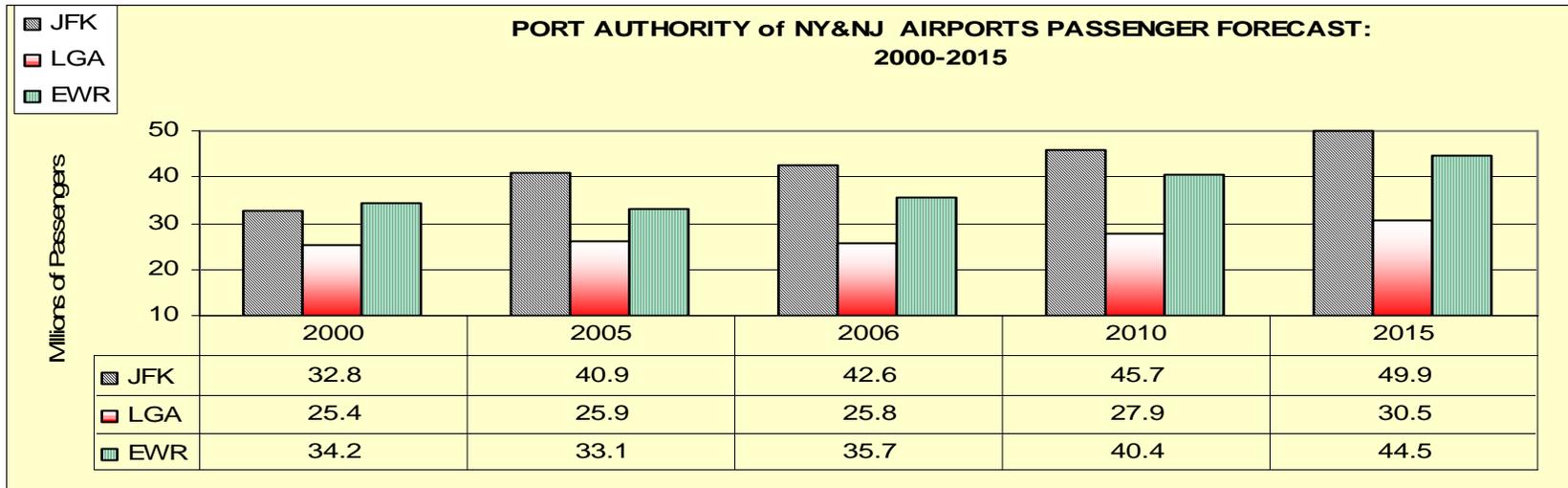
Other Assumptions

Declining real ticket prices due to competition.

- Strong U.S. economic growth averaging 3% between 2007 and 2016.
- Steady worldwide economic growth in excess of 3.2% annually.
- A growing regional economy, accompanied by job growth.
- An expanding O&D base assisted by incremental population and job growth within catchment.



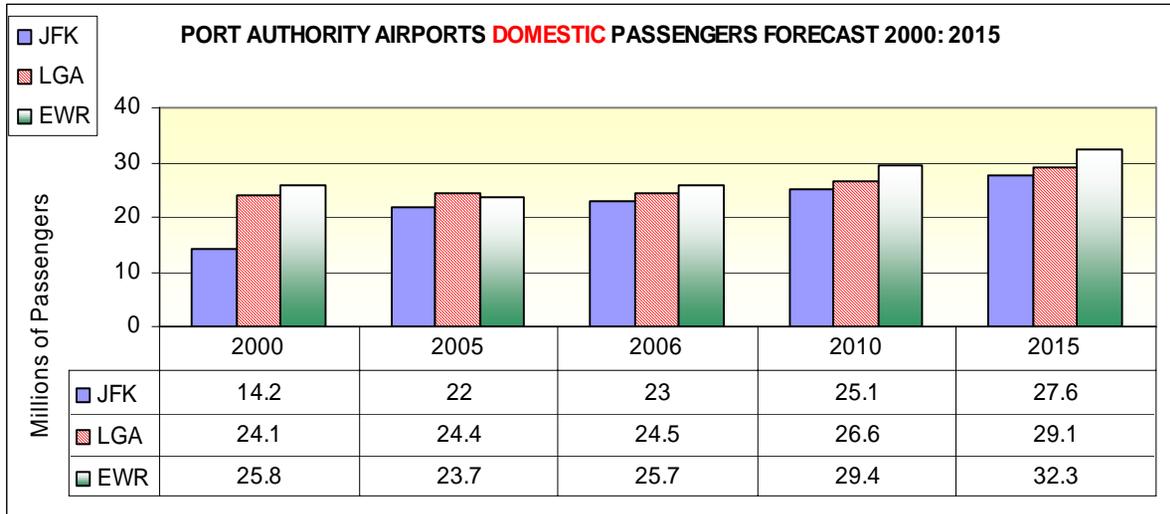
PORT AUTHORITY OF NY & NJ PASSENGER FORECAST: [JFK, LGA, EWR] 2000-2015



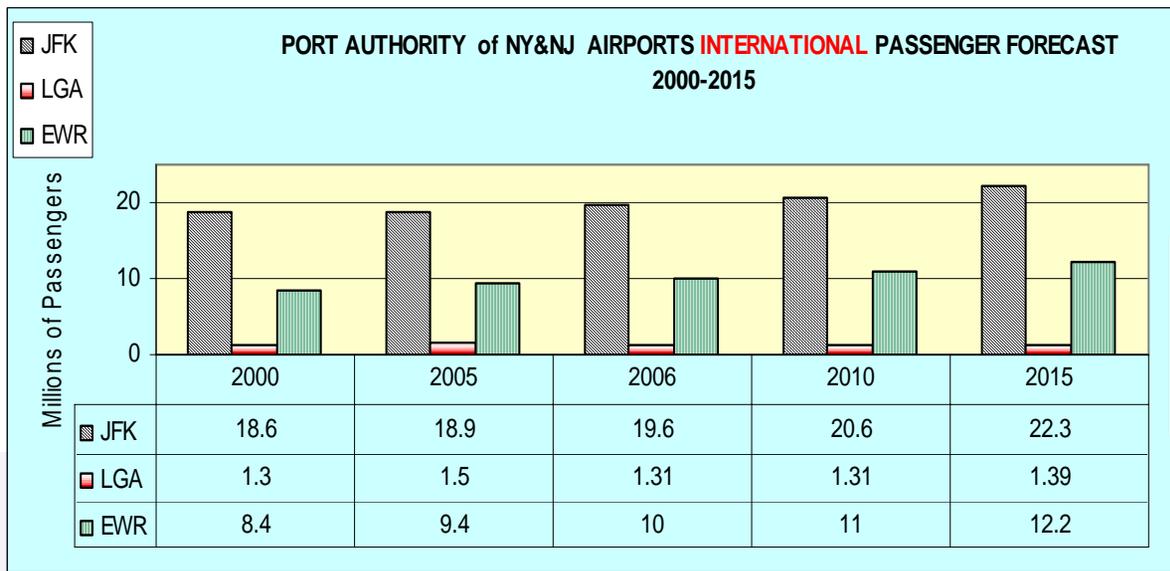
| | Average Annual Growth Rates | | | | 2005-2015 |
|--------|-----------------------------|-----------|-----------|-----------|-----------|
| | 1999-2000 | 2000-2005 | 2005-2010 | 2010-2015 | |
| JFK | 5.8% | 4.5% | 2.2% | 1.8% | 2.0% |
| LGA | 6.7% | 0.4% | 1.5% | 1.8% | 1.6% |
| EWR | 1.8% | -0.7% | 4.1% | 2.0% | 3.0% |
| REGION | 4.5% | 1.6% | 2.7% | 1.8% | 2.3% |

Regional passenger growth averages 2.3% annually.
 Continental expected to aggressively compete with LCC expansion at EWR.
 Strong growth in EWR catchment area demographics.

PANYNJ AIRPORTS: DOMESTIC & INTERNATIONAL PASSENGER FORECAST



| Domestic | Average Annual Growth Rates | | | | 2005-2015 |
|----------|-----------------------------|-----------|-----------|-----------|-----------|
| | 1999-2000 | 2000-2005 | 2005-2010 | 2010-2015 | |
| JFK | 4.4% | 9.2% | 2.7% | 1.9% | 2.3% |
| LGA | 6.6% | 0.2% | 1.7% | 1.8% | 1.8% |
| EWR | -0.4% | -1.7% | 4.4% | 1.9% | 3.1% |
| REGION | 3.2% | 1.8% | 3.0% | 1.9% | 2.4% |



| Intern'l | Average Annual Growth Rates | | | | 2005-2015 |
|----------|-----------------------------|-----------|-----------|-----------|-----------|
| | 1999-2000 | 2000-2005 | 2005-2010 | 2010-2015 | |
| JFK | 2.8% | 0.3% | 1.7% | 1.6% | 1.7% |
| LGA | 3.2% | 2.9% | -2.7% | 1.2% | -0.8% |
| EWR | 9.1% | 2.3% | 3.2% | 2.1% | 2.6% |
| REGION | 4.6% | 1.0% | 2.0% | 1.7% | 1.9% |



FORECAST RISK

- Skyrocketing Oil Prices – Jet Fuel Price Shock
- Potential Terrorism Attack
- U.S. Economic Recession



USES OF THE FORECAST

- TERMINAL & FACILITY PLANNING
- ESTIMATE PARKING REVENUES
- ESTIMATE CONCESSION REVENUES
- ESTIMATE OF PASSENGER FACILITIES CHARGES
- PROJECT FLIGHT FEE REVENUES
- ADJUST AIRPORT/TERMINAL SEASONAL EMPLOYMENT LEVELS
- BY THE TSA TO PROJECT WORKFORCE/WORK LOAD AND OTHER SECURITY RELATED ACTIVITIES
- TO CALCULATE INTER-TERMINAL PASSENGER CHARGES

