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# ***“Practical Market-Based Approaches –An Example”***

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# *Why We Are Here*

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“The first lesson of economics is scarcity; there is never enough of anything to satisfy those who want it. The first lesson of politics is to disregard the first lesson of economics.”

Thomas Sowell



# *The Presumption for Market Allocation*

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- All over the world, we are running out of runway capacity and yet somehow we have decided not to use the market to allocate this scarce resource, tell us when to build more of it or help us to finance expansion.
- It is always possible to create as economically efficient an allocation of scarce resources administratively as via a market mechanism ...for 24 hours or 24 seconds – until the market changes
- The Federal government auctions off thousands of rights and products—USGOV.org



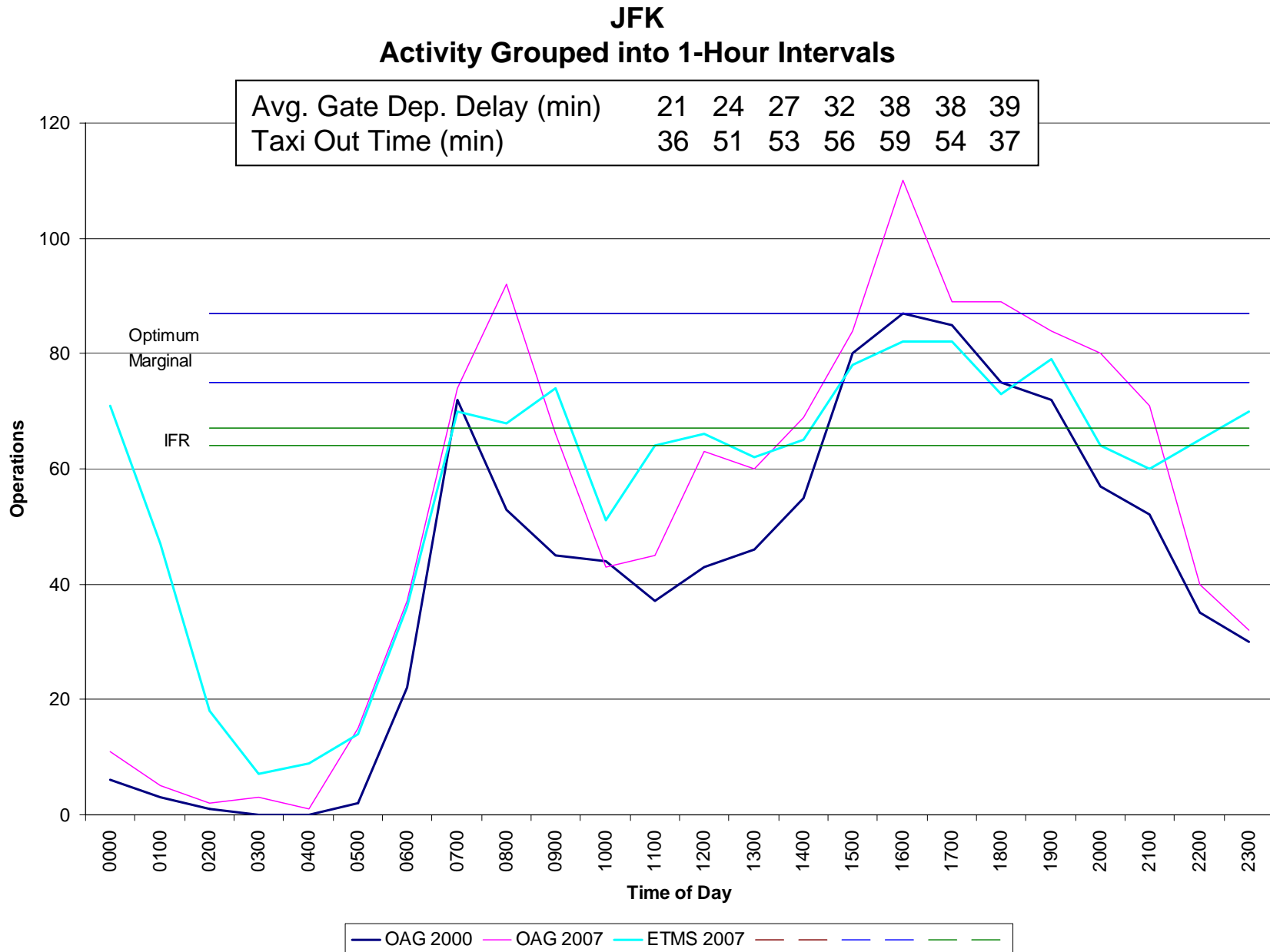
# ***What Have We Learned in the Nextor Effort***

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- ➔ Airlines and airports have long term contracts that are difficult to unwind
  - Slots and gates are tightly linked
  - Slots add a layer of complexity for entry
    - Concern with competition and ability of airport to handle changes in a dynamic industry
- ➔ The HDR set up a set of adverse incentives
  - Poor definition of property rights meant:
    - Incumbents held indefinite life assets and built business cases around them
    - Incumbents fear selling slots due to network effects and fear they will never get them back
  - New entrants were successful pleading for free entry
    - Entrants undervalue slots
    - Incumbents knew they would never get slots this way so overvalued them
  - Not much activity in secondary market



# NOW WHAT? JFK: July Schedule 2007 vs. 2000 and Actual July 2007 Performance



# Who Will Decide Which New Services Fly at a Controlled Airport?: Albany or Accra??

➔ FOR JFK, compare OAG July 2007 vs. July 2005, there are 856 net added flights per week (1176 new flights and 320 deleted flights per week).

New Flights Per Week: July 2007 vs. July 2005		
AEROMEXICO	PUEBLA, MEXICO	2
AIR CANADA	CALGARY, CANADA	12
AIR JAMAICA	BARBADOS, BARBADOS	7
AMERICAN AIRLINES	BALTIMORE, MARYLAND	7
	CHICAGO-O'HARE, ILLINOIS	14
	LOS CABOS, MEXICO	1
ASIANA AIRLINES	SEOUL-INCHEON, SOUTH KOREA	4
AVIANCA	BARRANQUILLA, COLOMBIA	3
CAYMAN AIRWAYS	GRAND CAYMAN, WEST INDIES	3
CHINA EASTERN AIRLINES	SHANGHAI PU DONG, P.R. CHINA	4
CZECH AIRLINES	NORFOLK/VA BEACH/W MBG, VIRGINIA	7
DELTA AIR LINES	ACCRA, GHANA	4
	ALBANY, NEW YORK	27
	AUSTIN, TEXAS	7
	BINGHAMTON, NEW YORK	14
	BOMBAY, INDIA	7
	BUCHAREST-OTOPENI, ROMANIA	4
	BUDAPEST, HUNGARY	5
	BUFFALO, NEW YORK	41
	BURLINGTON, VERMONT	28
	CLEVELAND, OHIO	20
	DALLAS/FORT WORTH, TEXAS	20
	DENVER, COLORADO	7
	DUBLIN, IRELAND	7
	FLORENCE-PISA, ITALY	4
	HARTFORD-BRADLEY, CONNECTICUT	20
	KIEV-BORISPOL, UKRAINE	5
	LONDON-GATWICK, ENGLAND	13
	LOS CABOS, MEXICO	1
	MANCHESTER, ENGLAND	7
	MANCHESTER, NEW HAMPSHIRE	27
	MIAMI, FLORIDA	7
	MONTEGO BAY, JAMAICA	6
	MONTREAL-DORVAL, CANADA	20
	NANTUCKET, MASSACHUSETTS	14
	PHOENIX, ARIZONA	14
	PORTLAND, MAINE	28
	PORTLAND, OREGON	7
	PROVIDENCE, RHODE ISLAND	27
	PUERTO VALLARTA, MEXICO	1
	PUNTA CANA, DOMINICAN REP.	7
	RICHMOND/W MBG., VIRGINIA	27
	ROCHESTER, NEW YORK	28
	SAN DIEGO, CALIFORNIA	7
	SAO PAULO-GUARULHOS, BRAZIL	7
	SHANNON, IRELAND	7
	ST. THOMAS-CYRIL E., VIRGIN ISLANDS	1
	SYRACUSE, NEW YORK	27

New Flights Per Week: July 2007 vs. July 2005		
EMIRATES	HAMBURG, GERMANY	7
EOS AIRLINES	LONDON-STANSTED, ENGLAND	12
ETIHAD AIRWAYS	ABU DHABI, U.A. EMIRATES	7
EUROFLY	ROME-DA VINCI, ITALY	5
FLYGLOBESPAN	CONNAUGHT, IRELAND	3
	LIVERPOOL, ENGLAND	4
JETBLUE AIRWAYS	ARUBA, ARUBA	14
	AUSTIN, TEXAS	21
	BERMUDA, ATLANTIC OCEAN	14
	BOSTON, MASSACHUSETTS	55
	CANCUN, MEXICO	14
	CHARLOTTE, NORTH CAROLINA	34
	CHICAGO-O'HARE, ILLINOIS	35
	COLUMBUS, OHIO	27
	HOUSTON-HOBBY, TEXAS	21
	JACKSONVILLE, FLORIDA	21
	NANTUCKET, MASSACHUSETTS	9
	NASHVILLE, TENNESSEE	21
	PITTSBURGH, PENNSYLVANIA	28
	PORTLAND, MAINE	35
	RALEIGH/DURHAM, NORTH CAROLINA	34
	RICHMOND/W MBG., VIRGINIA	27
	SAN FRANCISCO, CALIFORNIA	27
	SANTO DOMINGO, DOM. REP.	14
	SARASOTA/BRADENTON, FLORIDA	7
	TUCSON, ARIZONA	7
	WASHINGTON, D.C.-DULLES	34
LAN AIRLINES	SANTIAGO, CHILE	3
LOT - POLISH AIRLINES	RZESZOW, POLAND	1
NORTH AMERICAN AIRLINES	LAGOS, NIGERIA	3
SAUDI ARABIAN AIRLINES	RIYADH, SAUDI ARABIA	1
TAM LINHAS AEREAS	SAO PAULO-GUARULHOS, BRAZIL	14
US AIRWAYS	CHARLOTTE, NORTH CAROLINA	18
VIRGIN ATLANTIC AIRWAYS	LONDON-HEATHROW, ENGLAND	28
XTRA AIRWAYS	GEORGETOWN, GUYANA	3
	PORT OF SPAIN, TRIN. & TOB.	1
Grand Total		1176



# What Policies When?

## LOGICAL PROGRESSION OF POLICIES

	How Calculated	When Applied	Who Pays	Rationale
<b>Traditional Landing Fee</b>	$(\text{Total landing field budget}) / (\text{Landed weight}) \times \text{Landings}$	All day	All operators	Landing field budget depends in part on facilities to accommodate larger aircraft
<b>INVEST???</b>				
<b>Revenue Neutral Flat Fee</b>	$(\text{Total landing field budget}) / (\text{Operations})$	All day	All operators	When one operation precludes another, there is no reason to charge them differently
<b>INVEST???</b>				
<b>Revenue Positive Flat Fee</b>	Surcharge on existing landing fees	Selected hours	All operators	Spread operations out of the peak periods
<b>INVEST???</b>				
<b>Revenue Positive Peak Fee</b>	Vary surcharges above landing fees	Selected /every hour	All operators	Vary the size of the surcharge in proportion to the delays (and therefore costs) imposed by excess demand in specific hours
<b>or</b>				
<b>Auction</b>	Define slots in each hour that maximizes net benefits (varies by hour)	Every hour	All operators	Reduce uncertainty about delays while allowing for optimal delay levels over the day



# What's the Problem with "Historic Slots"?

## → Historic Slots:

- Recognize carrier and airport investments in historic service patterns
  - Gates  $\leftarrow \rightarrow$  Slots  $\leftarrow \rightarrow$  Airplanes
- No problem so long as there are no alternative uses...
  - How do we know if some incumbents or new entrants have better uses of the slots?
    - Who makes the tradeoff between new flights to Accra by Airline X and new flights to Albany by Airline Y???
  - Poor incentive structure: Why sell to a competitor???

→ For practical reasons, it may be necessary to recognize both aspects, meaning some slots are grandfathered and some are allocated by the market periodically





# One “Practical” Concept

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- ➔ “Congestion Pricing” with auction principles
  - Frequently **some** “slots” are available
  - Addresses “dynamic” industry
  - Some slots grandfathered for some period of time
  
- ➔ Fears about congestion pricing:
  - Can’t control demand so delays will explode
  - Lots of carrier gaming – publishing schedules a la post Air 21 at LGA
  - Can’t reach market closing prices easily
  
- ➔ Answer: adopt auction principles but attempt to preserve the best feature of congestion pricing – ability to fly when you want if you can pay for it



# Objectives of Concept

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- 1) Control congestion
- 2) Recognize airline and airport investment in historic service patterns
- 3) Inject some market discipline to insure that operators face the opportunity cost of their access rights

**Note:** Pricing is potentially more flexible than a slot program—although the objectives are the same



# Setting the Operations Objective in the Concept

Target operations per day	FAA to set based on balanced capacity (VMC; IMC); and expected delays
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The same level of operations will be established by FAA in any case –i.e. with or without market allocation, there will be slots at LGA but the exact number in any hour could vary if prices are very high in one hour and lower in another



# “Historic” Slots

What Grandfathered\*

X% of temporary IMC slots, e.g., airport capacity during IMC conditions—in hours when demand exceeds IMC capacity

X may vary over time

Can be sold/leased/swapped at any time

Duration: Y years

At JFK: Only during hours of the day when demand is likely to exceed capacity  
Summer 07: 0800-0900 and 1500-2000 + possibly some adjacent hours for spillover

At LGA: all day long



# Market For Access Beyond IMC Capacity

What Sold	Access to airport beyond X % of grandfathered IMC temporary slots Life equals Z years
How Sold	<ol style="list-style-type: none"><li>1) Multi-round process: Schedules published <i>K</i> days before first flight; price set based on expected delay costs; schedules adjusted; prices reset until end declared by Pricing Board</li><li>2) Carriers required to take or pay based on schedule at end; ending determined by Pricing Board</li><li>3) Carriers may swap/sell access rights at any time with notification to FAA</li><li>4) Minimum deposit required to participate on initial schedule offered</li></ol>



# How Often Sold?

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Pricing Events	X times annually—e.g., IATA scheduling events
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Example: Suppose 15% of all slots are to be sold; initially, some be grandfathered for 1,2,3,4 or 5 years and then sold with 5 years of life so that 3% of capacity would be sold each year



# How Would the Money be Used?

(Not a legal opinion;  
may require legislation)

- 1) Recycle to operators based on other fees paid (landing fees; PFC's, etc.) and an annual price index
- 2) Used to buy "historic" slots from carriers
- 3) Held by third party in an interest bearing account to pay for any approved runway capacity or complementary expansion projects at NY airports

- 1) Corrects distortions of weight based landing fees and passenger fees
- 2) Creates mechanism to compensate carriers for historic investments
- 3) Creates a pool of capital to address capacity and related projects

Highway experience suggests support for pricing where most people don't pay (London) or the proceeds are shared



# *How to Insure Access*

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Operator Agreement on Complementary Facilities	Carriers agree to accommodate other operators at compensatory rates when gate capacity available
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Part of the carrier agreement to participate in the market





# ***Should There Be Exemptions?***

Exemptions	None  Or per ORD and interpretation of international agreements, any international operation exempt (whether by U.S. or foreign operator) but this hurts U.S. carriers with domestic or international connection complexes vs. foreign carriers with hubs overseas
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# Who are the Market Participants?

Who May Participate?	Any certificated U.S. or foreign carrier  City?  A third party (e.g., FBO) seeking to serve GA operators  Financial intermediaries??
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All participants pay the same market prices



# *Independent Pricing Board*

<p>Who prices access?</p>	<p>Independent Board whose sole responsibility is to reach target operations numbers</p> <p>Board may set prices in time increments (e.g., hourly, half hour, quarter hour) as may be necessary</p> <p>No limit on prices</p> <p>No limit on number of rounds of scheduling</p> <p>Board collects deposits based on initial schedules and enforces take or pay provisions</p> <p>Board declares end of pricing event, and publishes final rules</p>
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# *How Do You Know It Will Work?*

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- Essentially a hybrid—congestion pricing with auction components where the participants make flight offers and then modify them based on price changes
  - Deposit and take-or-pay provisions reduce gaming, induce commitment
  - Agreement on complementary facilities improves chances that gates and associated facilities will be available when needed
  - Board has broad authority to insure that market works
    - Board's only objective is to reach stated operations goals for the airport
  
- Limited portion of airport capacity in the market initially
  
- More flexible than slots alone—new or existing operators get frequent opportunities for access to facility and hourly operations may vary based on willingness to pay



# *How Hard Is This and Is It Worthwhile?*

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## → Not very hard

- Airline schedule changes occur at regular intervals
- Historic slots make up the majority of the capacity in the concept presented
  - Stability
  - Protect investments
- There is lots of experience with congestion pricing
- There is lots of experience with auctions
- The concept proposed here is a hybrid

## → Yes it is worthwhile

- The market will determine whether a flight to Albany or Accra is added to the flight schedule

