

NEXTOR Seminar
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Impact of Infrastructure-Related Taxes and Fees on the Cost of Air Travel

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Latest Reference

- Yamanaka, S., J. Karlsson and A. Odoni, “Aviation Infrastructure Taxes and Fees in the United States and the European Union”
- TRB, Session 415, Global Airline Issues, Tue., 1/24, 8:00 – 9:45
- Transportation Research Record, to appear
- <http://web.mit.edu/TicketTax/>

Background

- **Concerns about proliferation and increased cost impact of ticket taxes and fees**
 - Airlines everywhere
 - U.S. Congress/EU Commission
 - Media
 - Passengers
- **Objective: To quantify U.S. & EU taxes+fees**
 - In absolute terms
 - Relative to ticket price
 - Changes over time
 - Distribution by fare levels, type of airline, distance

U.S. ticket taxes and fees

Tax/Fee	Symbol	Rate	Recipient
Federal ticket tax	FTT	7.5%	Airport and Airway Trust Fund
Federal segment tax	FST	\$3.20 per segment	
Passenger facility charge	PFC	\$3 or \$4.50 per enpl.	Collecting airport
Federal security service fee	FSSF	\$2.50 per enpl.	TSA

Notes:

- Rates effective 2005
- Only includes domestic taxes and fees added directly to the price of tickets
- PFC and FSSF collection limited to first 2 enplanements per one-way trip
- Rural airports exempt from some taxes
- Special FST & FTT rules exist for Alaska and Hawaii
- FSSF temporarily suspended from June 1 to September 30, 2003

U.S. taxes not included in study

Tax	Rate	Basis
International arrival tax	\$14.10	Per arriving international passenger
International departure tax	\$14.10	Per departing international passenger
Immigration user fee	\$7.00	Per arriving international passenger
Customs user fee	\$5.00	Per arriving international passenger
Animal and plant health inspection service passenger fee	\$4.95	Per arriving international passenger
Animal and plant health inspection service aircraft fee	\$70.00	Per arriving international aircraft
Jet fuel tax (commercial use)	4.3¢	Per gallon
Leaking underground storage tank fuel tax	0.1¢	Per gallon
Air carrier security fee	Confidential	Per carrier (based on CY 2000 screening costs)
Cargo waybill tax	6.25%	Domestic freight waybill
Frequent flyer tax	7.5%	Sale of the right to award frequent flyer miles to third parties

Definitions

- Total taxes and fees (U.S. example):

$$TTF = FTT + FST + FSSF + PFC$$

- Effective tax rate:

$$ETR = \frac{E(TTF)}{E(BF)} \times 100\%$$

U.S. methodology

- DB1A: DOT *Origin and Destination Data Bank 1A Ticket Dollar Value* database
- Includes all tickets ending with “0” (aka “10% ticket sample”)
- 2Q04: 4.4 million records representing 10.5 million pax
- Note: DB1A only reports total fare – individual taxes have to be computed retroactively:

PFC = f (airports in itinerary)

FSSF = \$2.50 x number of segments

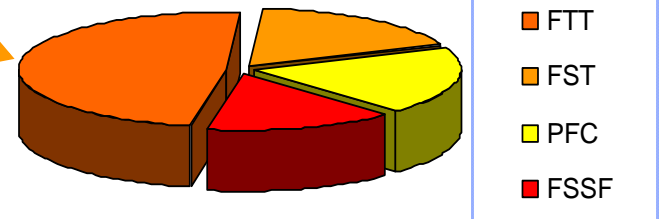
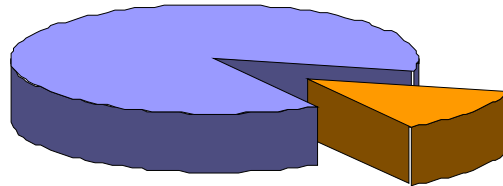
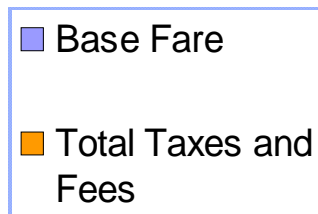
FST = \$3.20 x number of segments

FTT = 0.075 x BF

BF = Total – (FTT + PFC + FSSF + FST)

U.S. results

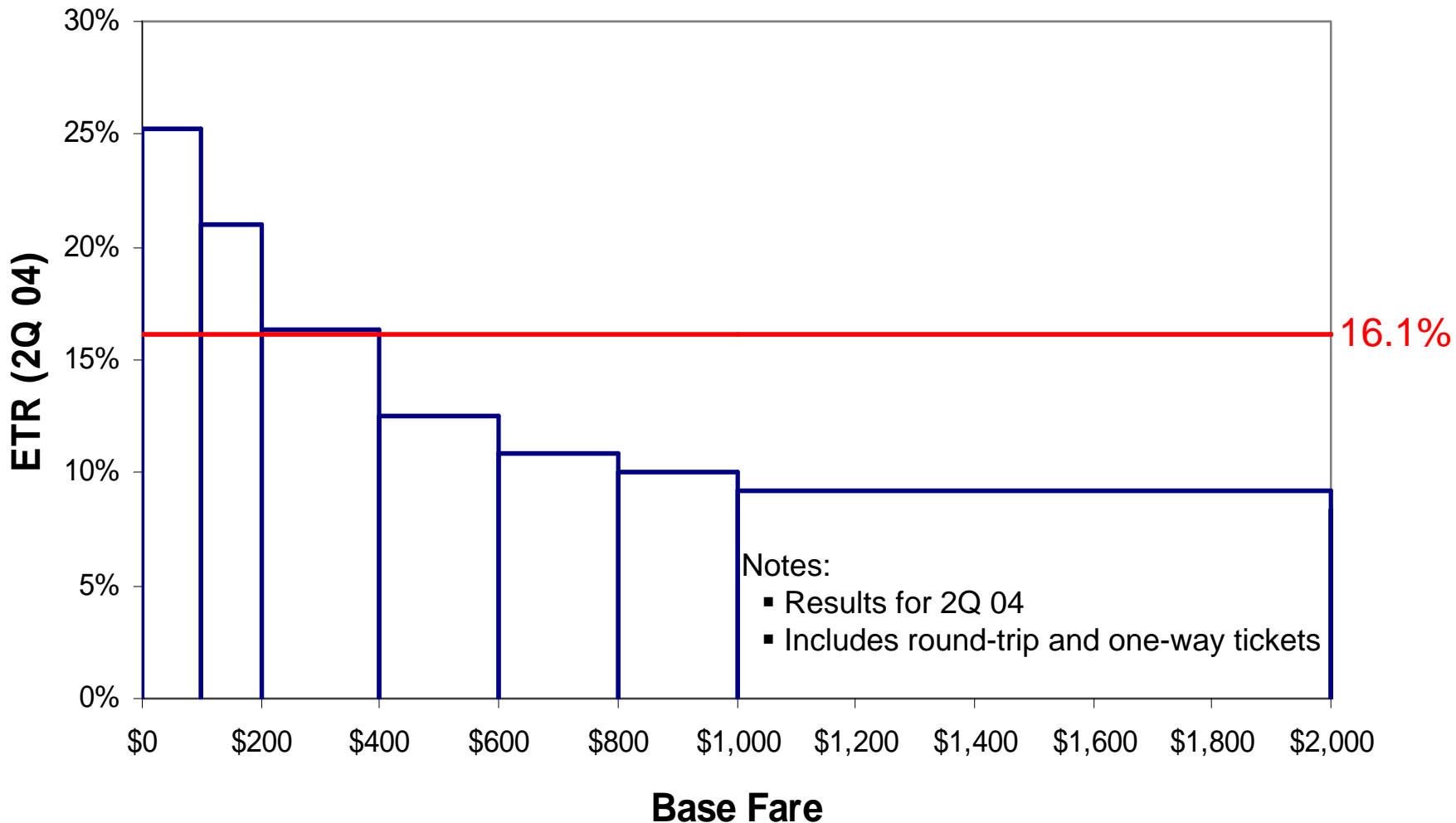
BF	TTF	FTT	FST	PFC	FSSF	ETR
\$268.29	\$44.25	\$20.12	\$8.06	\$9.58	\$6.50	16.5%



Notes:

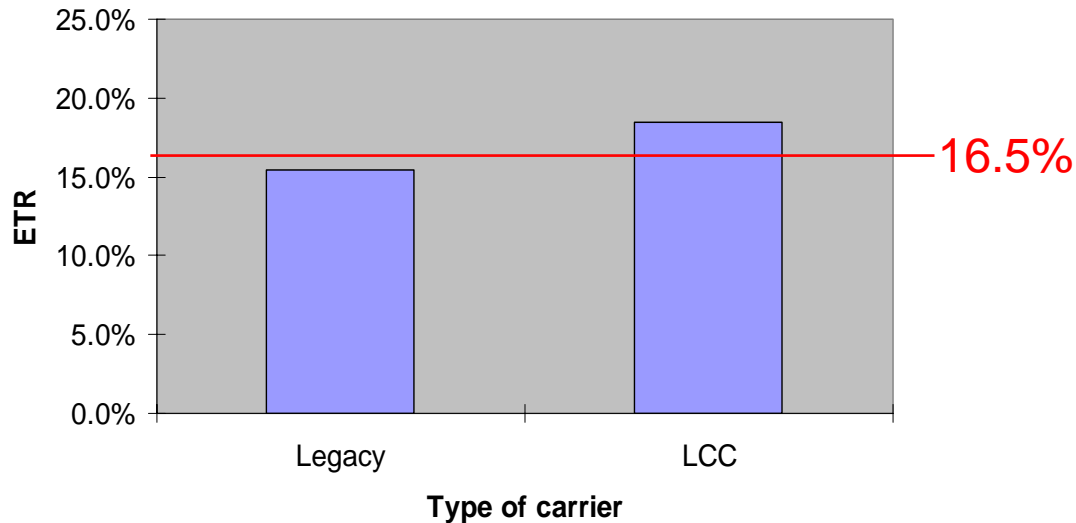
- All results for 2Q 04
- Includes round-trip tickets only
- Average number of segments in each direction: 1.30

Taxes impact low fares...



...and low-cost carriers (but less than expected)

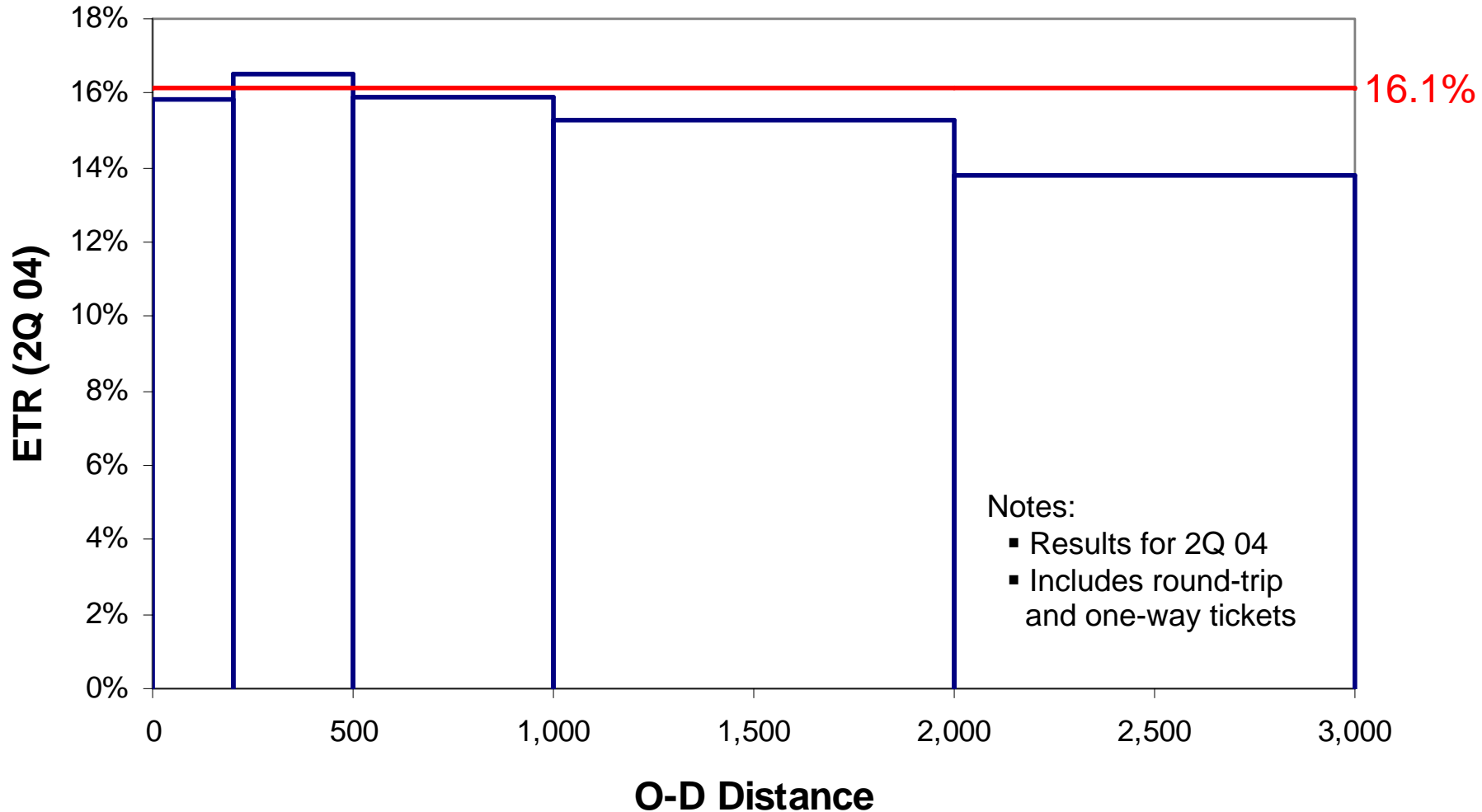
Carrier type	BF	TTF	FTT	FST	PFC	FSSF	ETR
Low-cost	\$185.91	\$34.37	\$13.94	\$6.99	\$7.81	\$5.63	18.5%
Legacy	\$305.33	\$47.00	\$22.90	\$7.99	\$9.66	\$6.45	15.4%



Notes:

- All results for 2Q 04
- Includes round-trip tickets only

Taxes and O-D distance



Comparison: 1993-2004

Quarter	BF	TTF	FTT	FST	PFC	FSSF	ETR
2Q 1993	\$444.89	\$48.40	\$44.49	-	\$3.91	-	10.9%
2Q 2002	\$291.74	\$46.26	\$21.88	\$8.35	\$9.07	\$6.96	15.9%
2Q 2004	\$268.29	\$44.25	\$20.12	\$8.06	\$9.58	\$6.50	16.5%

- Reported in 2004 dollars; round-trip fares only
- In real terms:
 - Average total taxes and fees per ticket: little change
 - Base fare has decreased by \$175 or 40% (!)
 - There has been an 8% fare decline since 2002
- With a constant base fare the ETR would have been 12.9% in 2004, *ceteris paribus*

Conclusions – U.S.

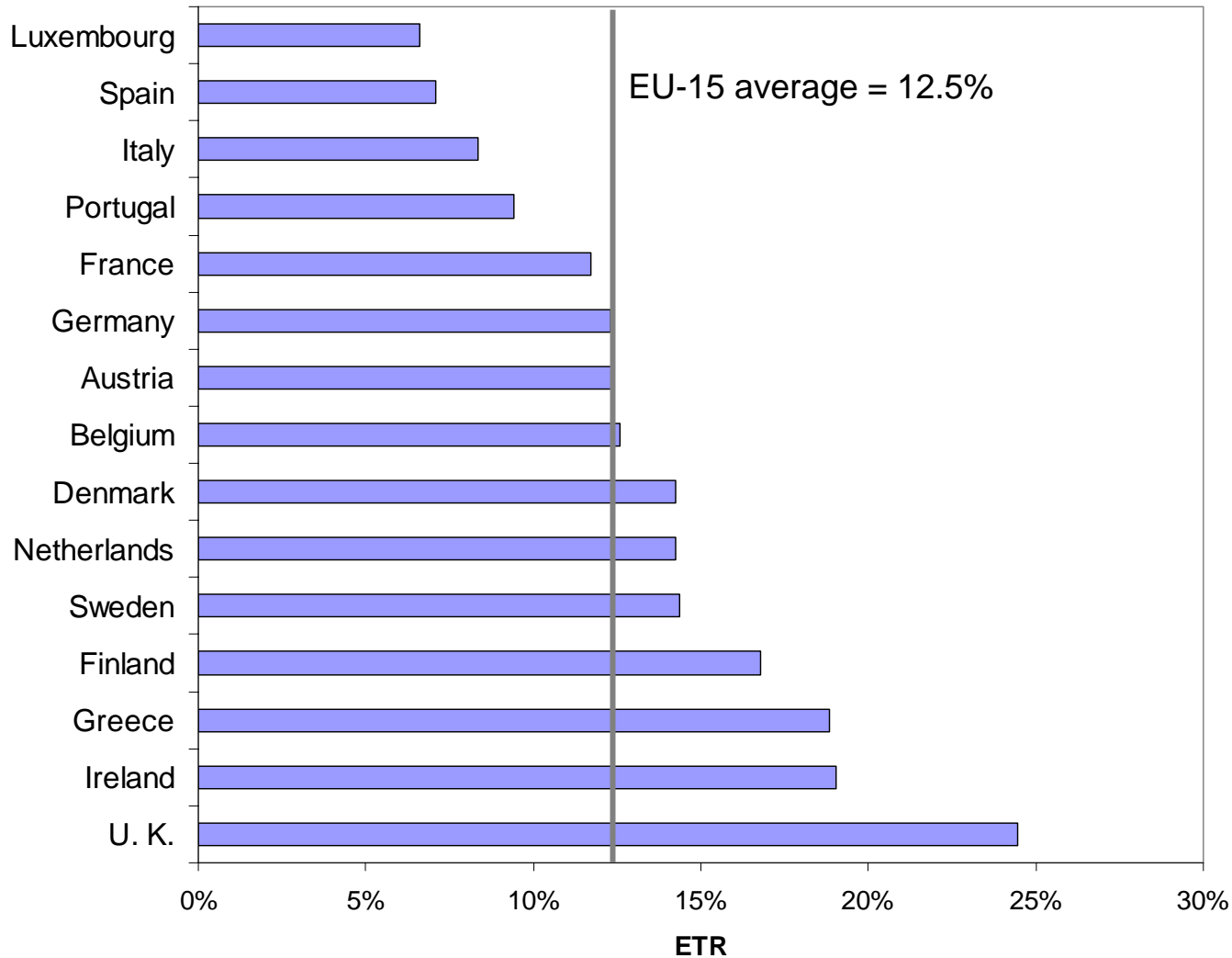
- The effective tax rate on all domestic tickets in the U.S. in 2004 was about 16.5% [**“bad, but not as bad...”**]
- Ticket taxes impact the lowest fares, but impact on ***low-cost carriers*** is mitigated
- Effective tax rates are relatively insensitive to O-D distance traveled
- Tax rate increased from 11% to 16.5% over last ten years, mostly due to decline in fares

1. EU results [Preliminary]

Case	BF	TTF	BF+TTF	ETR
EU-15 Total	\$274.24	\$34.17	\$308.41	12.5%
EU-15 Roundtrip (81%)	\$298.82	\$38.68	\$337.50	12.9%
EU-15 One-way (19%)	\$169.64	\$14.97	\$184.61	8.8%
U.S. Roundtrip (2Q 04)	\$268.29	\$44.25	\$312.54	16.5%

Note: Results for EU-15 nations from January 13-14, 2004 sample of 335,000 tickets

ETR by country of origin [Prelim'ry]



Rough US-EU Comparison

[Preliminary]

- An important difference between the US and the EU is that in the EU airlines pay directly for Air Navigation Services (i.e., ATM), not through taxes and fees on passenger tickets
- Based on data provided by LH and SAS, ANS fees amount to roughly 7% of average base fare
- Thus, ETR for EU-15 seems to be about **19%** (=12%+7%), slightly higher than 16.5% for US

2. The Larger Question

- What is the total cost of aviation infrastructure (capital expenses, operations, and security of airports and ATC) as a % of the total amount spent by passengers and by freight shippers for air transportation?

The Larger Question [2]

- Ongoing project with ATA cooperation
- Comprehensive template prepared
- Includes international and domestic taxes and fees, fees paid directly to airports, cost of airline financed facilities
- Template distributed to ATA airlines

Guesstimate

- In 2004, approximately 20 ¢ out of every \$ spent by air transportation consumers for domestic or international travel (passenger or freight) on US airlines was used to cover infrastructure costs
- Compare: labor ~30 ¢; fuel ~17 ¢; aircraft ownership ~8 ¢
- “Stay tuned” for more definitive estimates

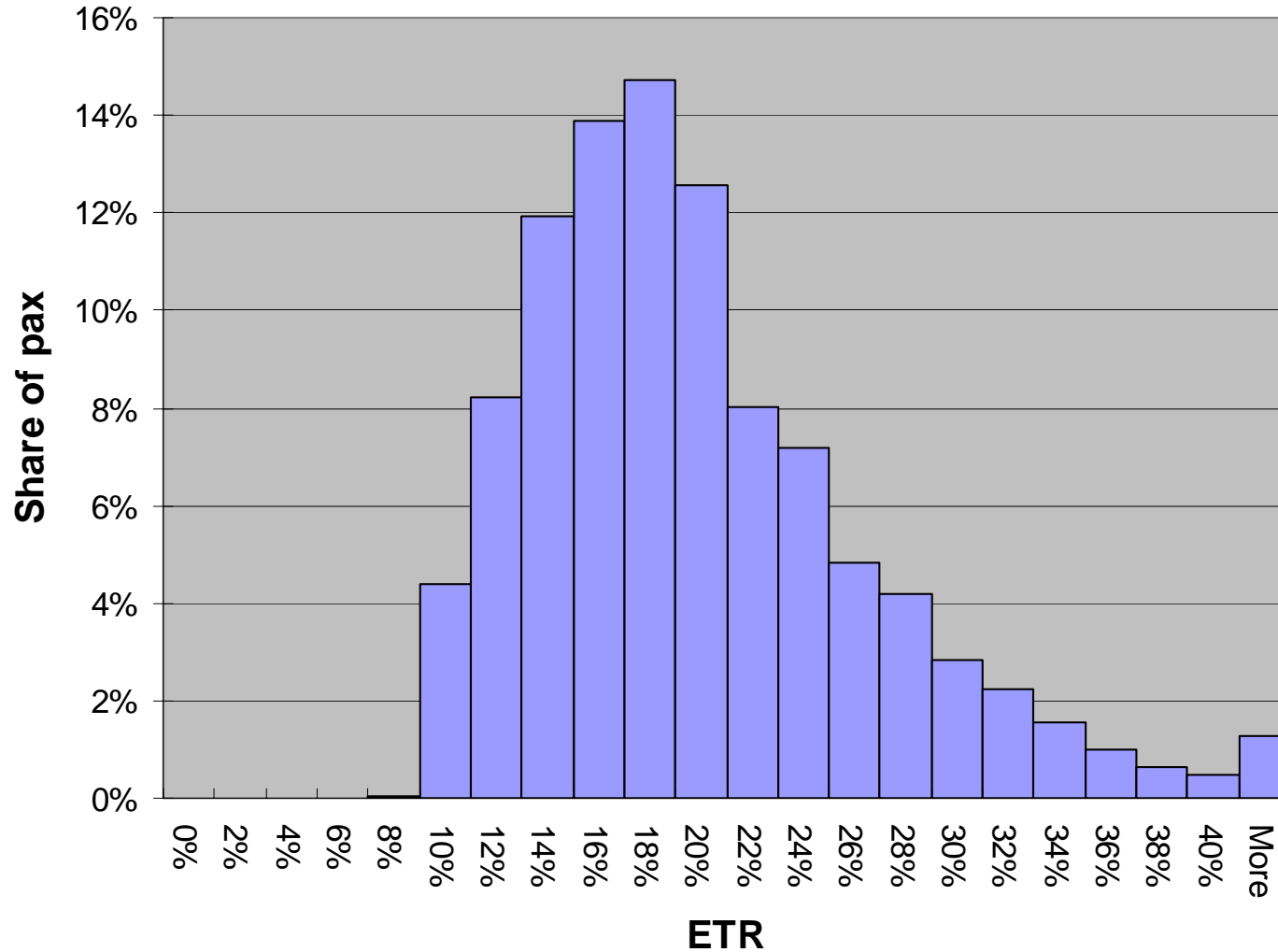
Overall Conclusion

- Whether paid directly (in the form of taxes and fees) or indirectly (by the airline), the total cost of infrastructure is the second or third highest component of cost experienced by aviation consumers (behind labor, comparable to fuel).
- It is essential to contain, as much as possible, infrastructure costs, in the same way that carriers attempt to contain all the other cost components.

Questions?



Distribution of ETR



EU challenges

- No database equivalent to U.S. DB1A
- Limited GDS sample for EU-15:
 - 335,000 intra-EU tickets collected January 13-14, 2004
 - Ongoing analysis: 15 more days of 2004
- Does not include LCCs or charter carriers
- Does not cover air navigation service fees
- Results are not directly comparable to U.S.

EU ticket taxes and fees

