

Airline industry problems and prospects

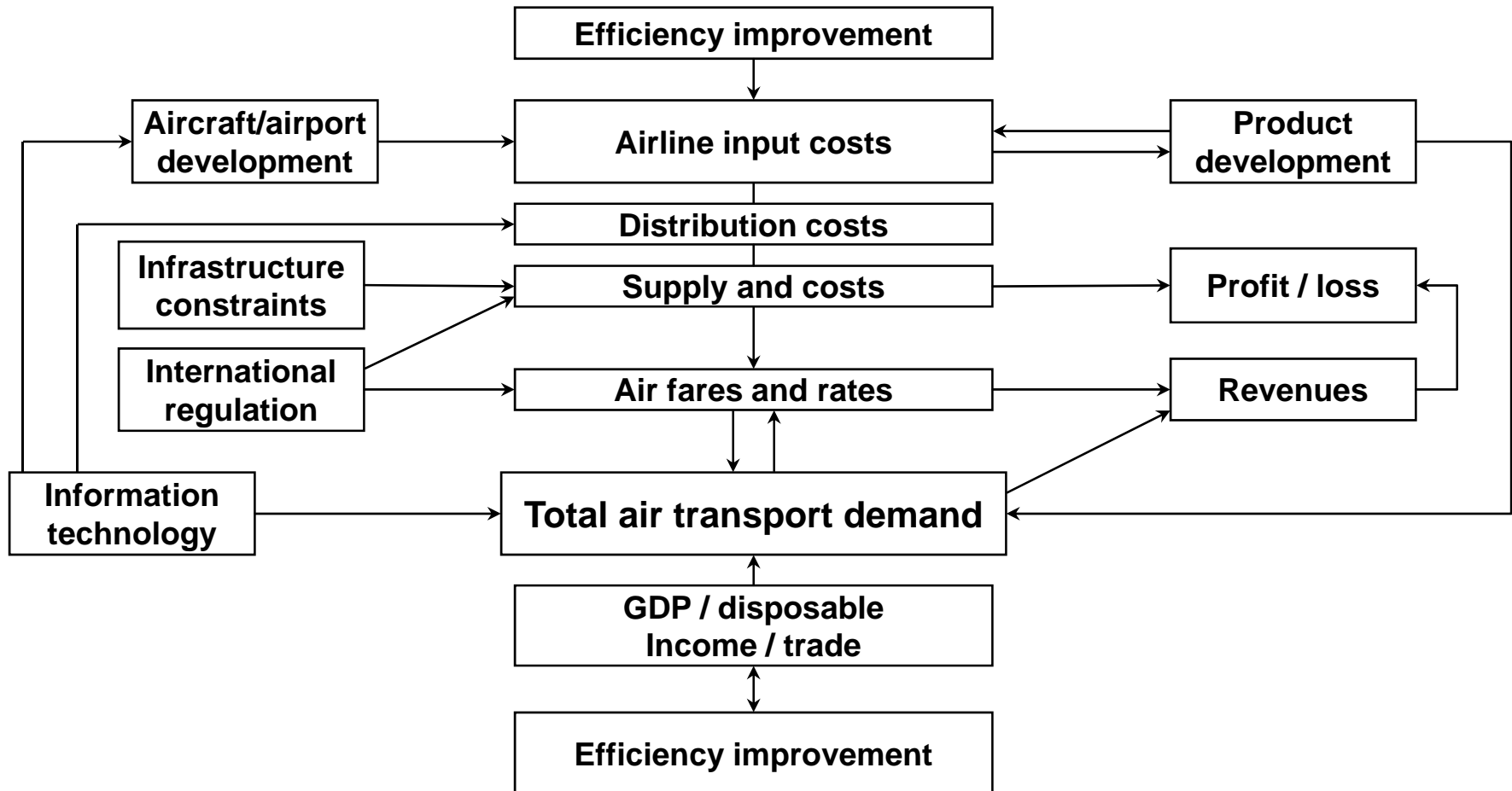
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12 December 2007

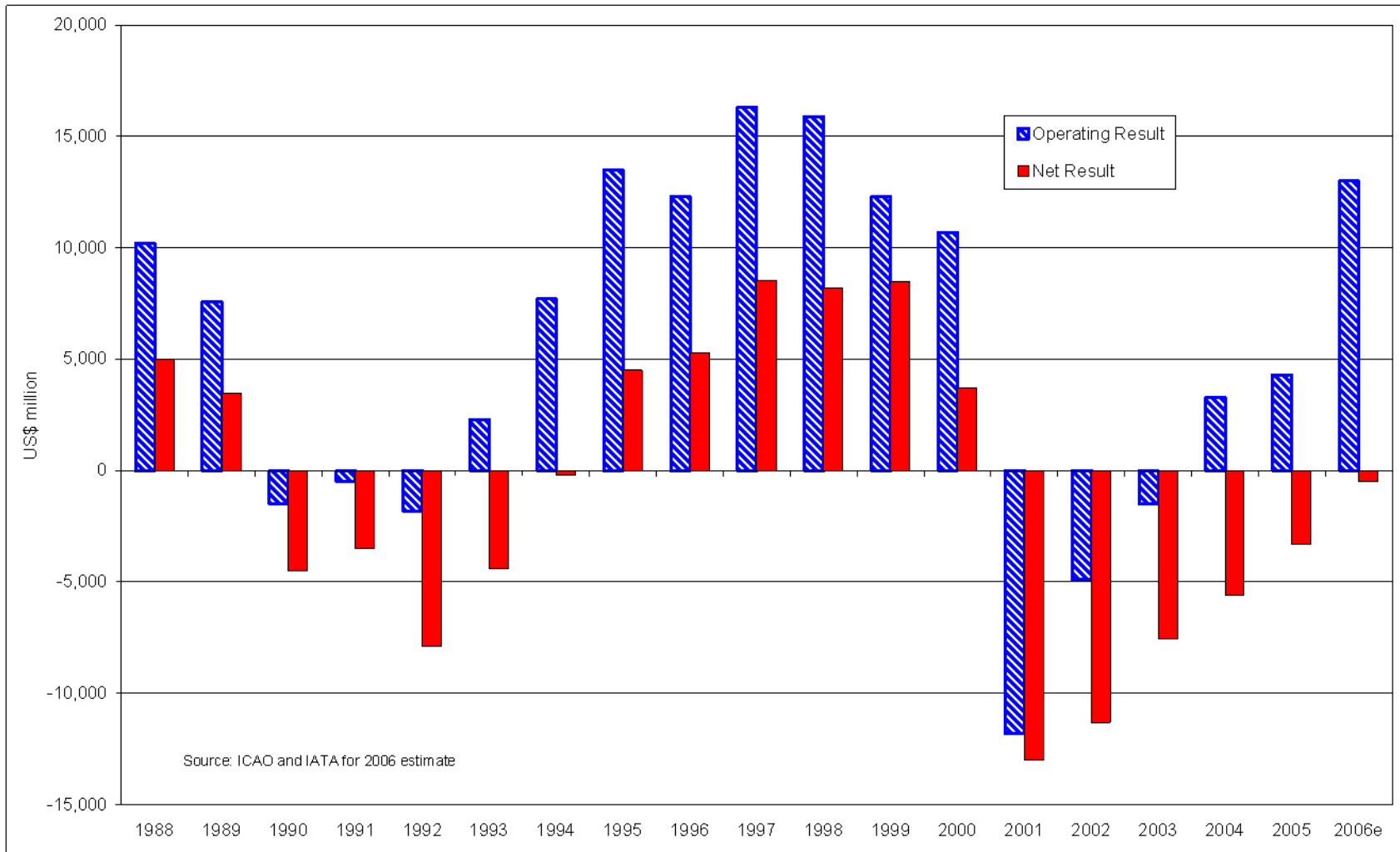
Presentation Outline

- ❑ **The elements of the jig-saw puzzle**
- ❑ **Trends in financial results**
- ❑ **Industry characteristics and problems**
- ❑ **Major constraints**
- ❑ **Trends in load factors**
- ❑ **Financing?**
- ❑ **Traffic growth prospects**
- ❑ **Productivity is the key**
- ❑ **The environmental challenge**
- ❑ **Summary of main points**

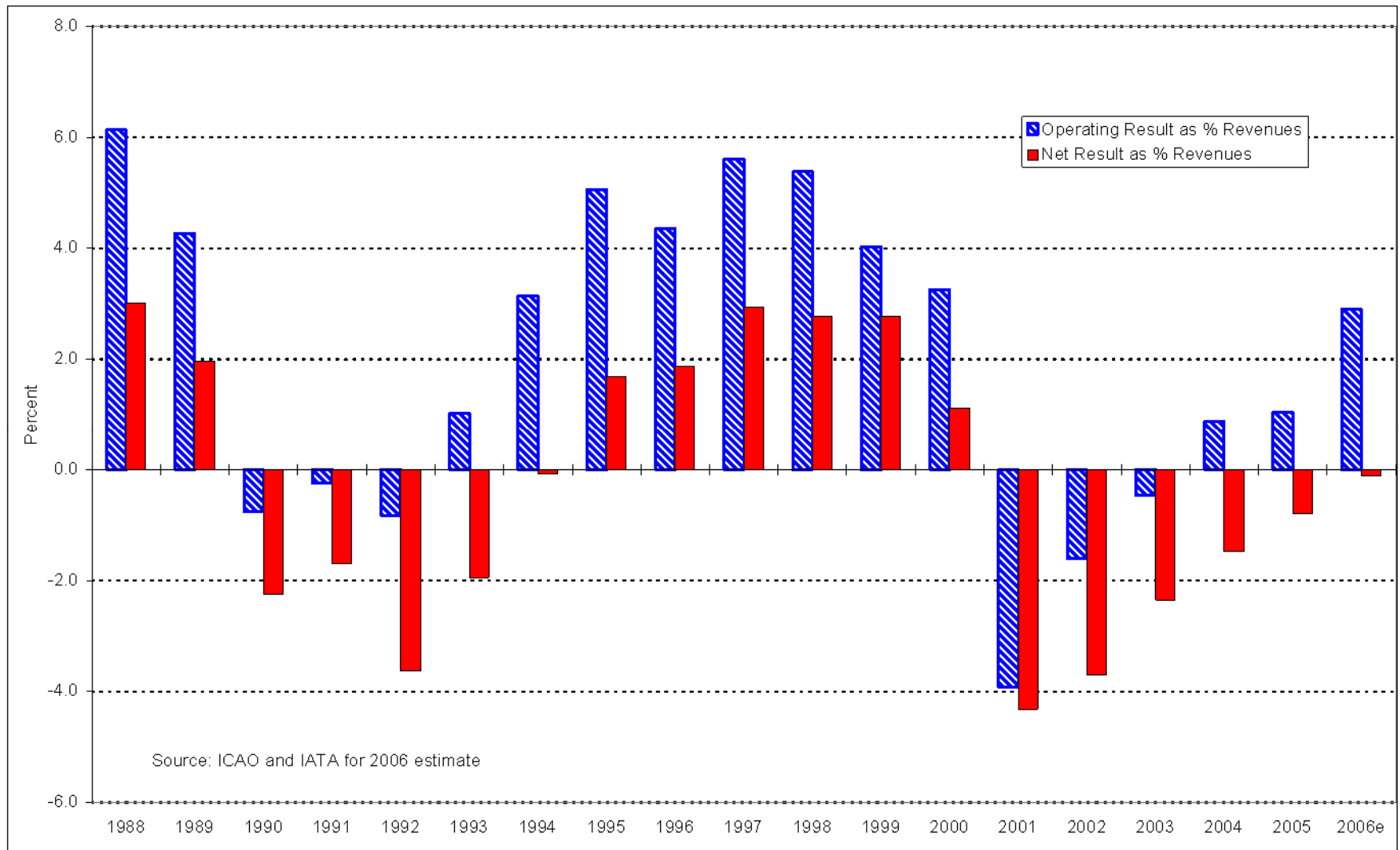
The airline jig-saw puzzle



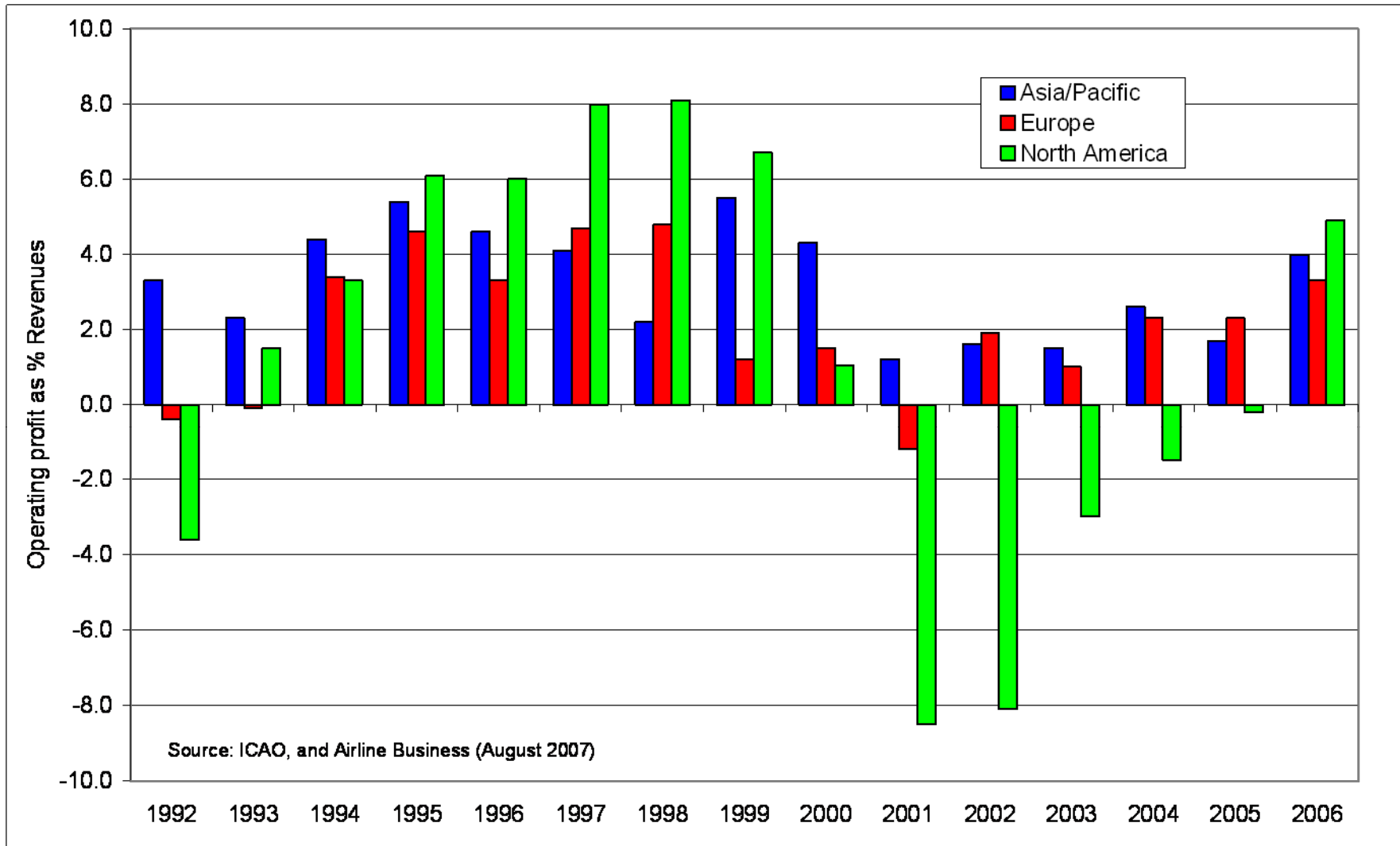
World scheduled airline financial results: US\$



World scheduled airline financial results: margins

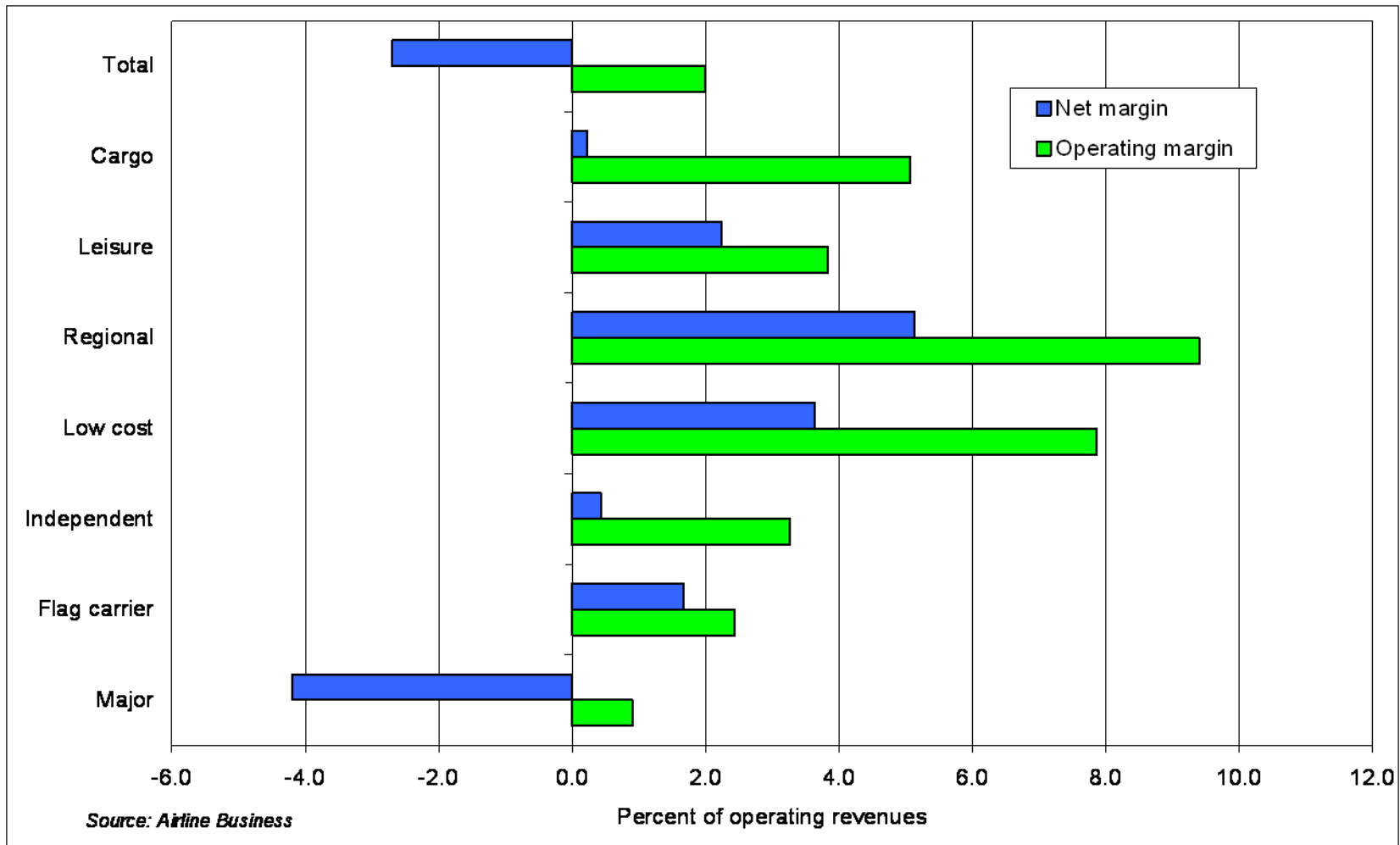


World scheduled airline financial results: margin by region

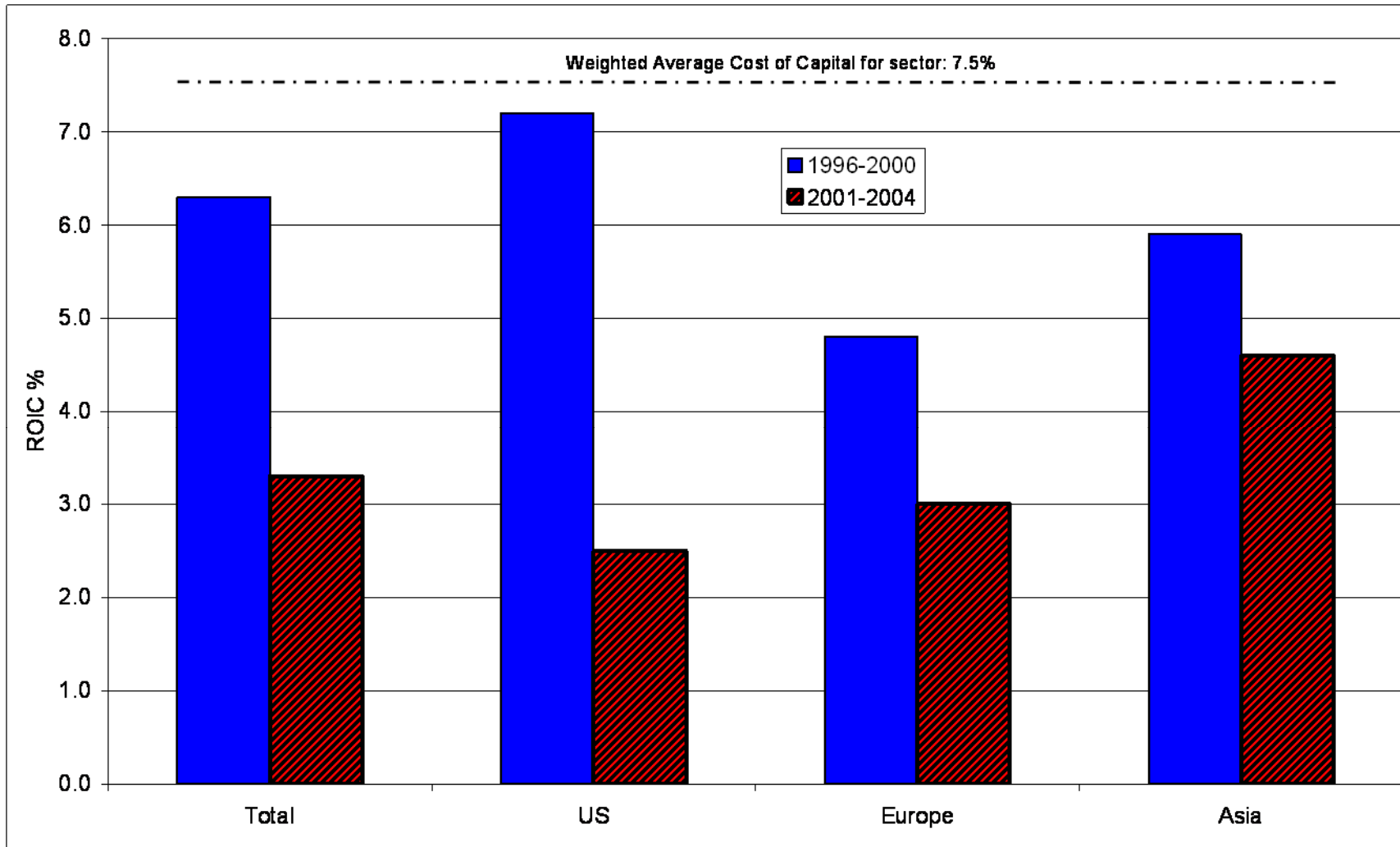


The smaller airlines tend to be more profitable

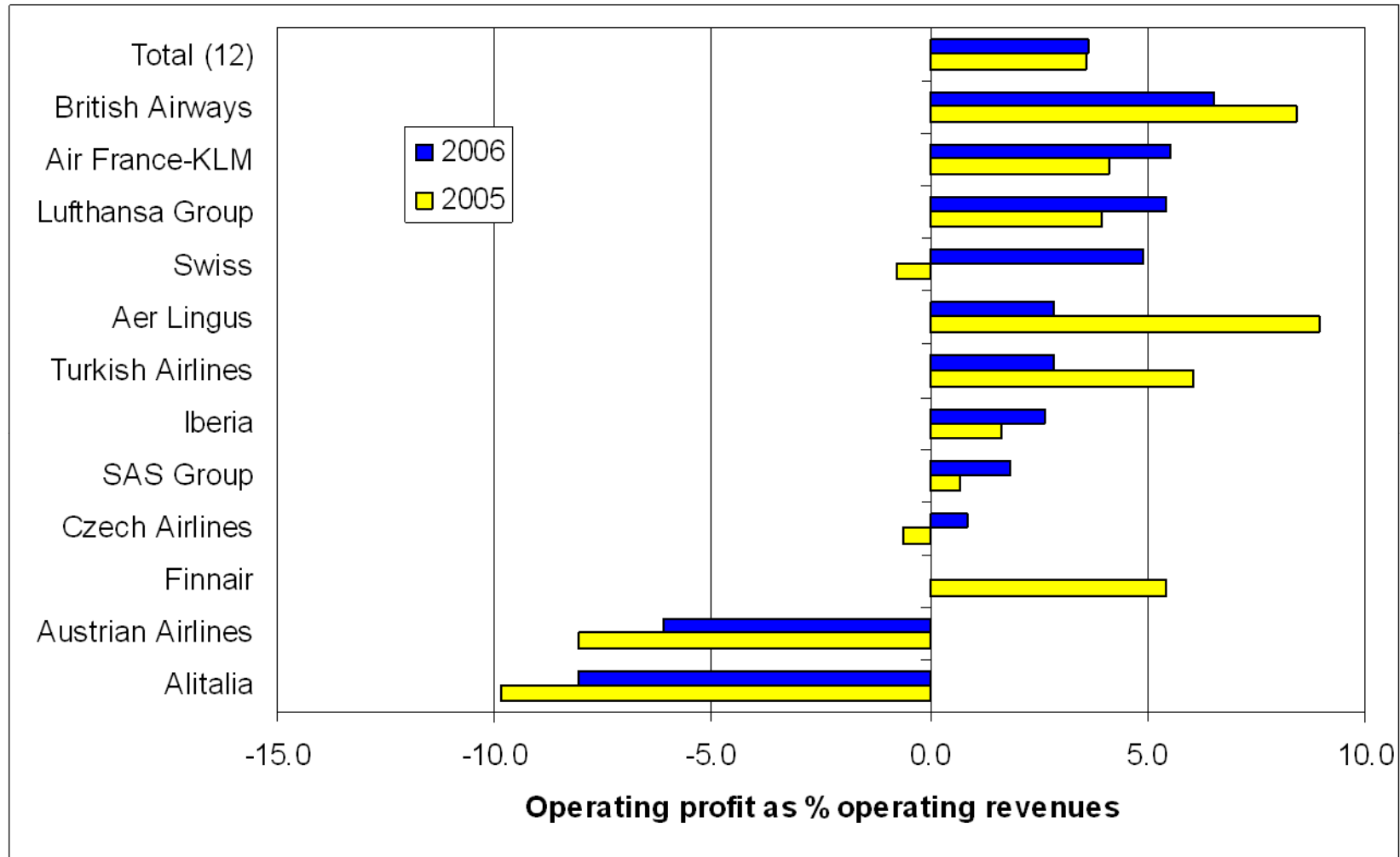
(average of 2003, 2004 & 2005)



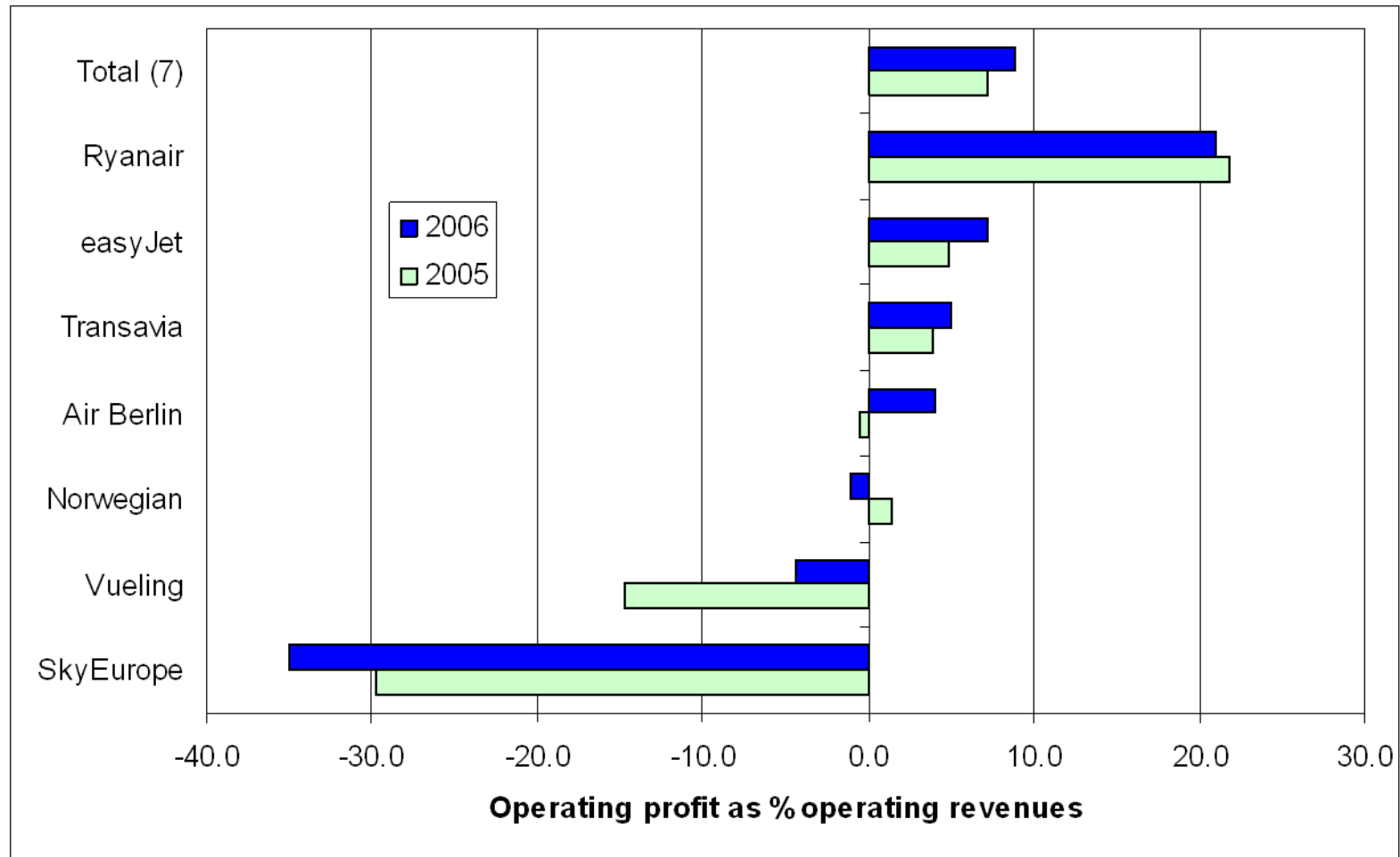
World scheduled airline return on invested capital by region



European airline profit margins: network



European airline profit margins: LCC



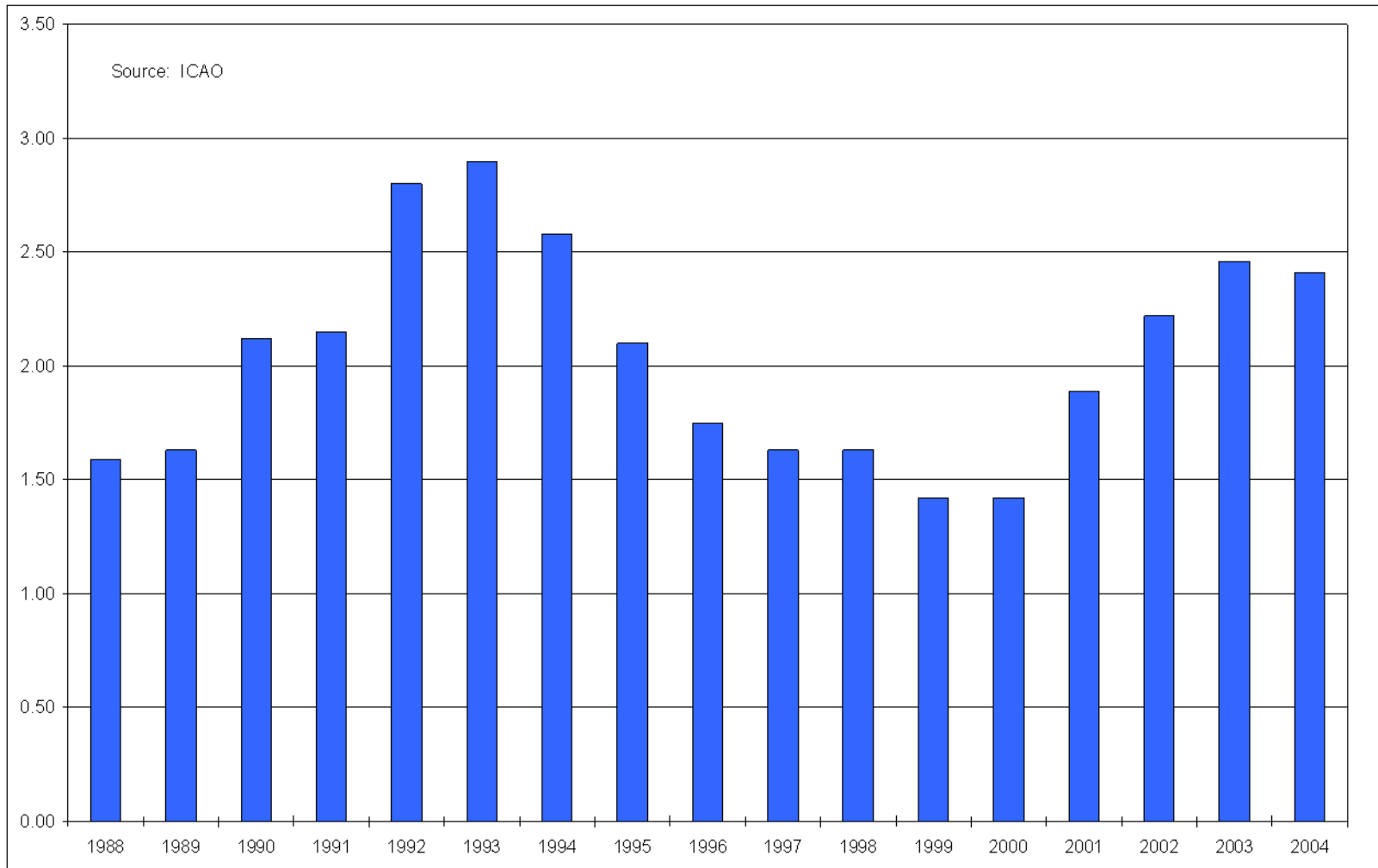
Airline Industry Characteristics

- ❑ **Strongly influenced by economic cycles**
- ❑ **Seats cannot be stored**
- ❑ **High operating gearing**
- ❑ **High financial gearing and mobile assets**
- ❑ **Many markets highly seasonal**
- ❑ **Large number of customers worldwide**
- ❑ **Long aircraft ordering lead times**

High Operational Gearing

- ❑ **Variable costs (escapable in short-term): approx. 40% of total**
- ❑ **Indirect costs (escapable in medium-term): approx. 40%**
- ❑ **Fixed aircraft-related costs (escapable medium-term): approx. 20%**

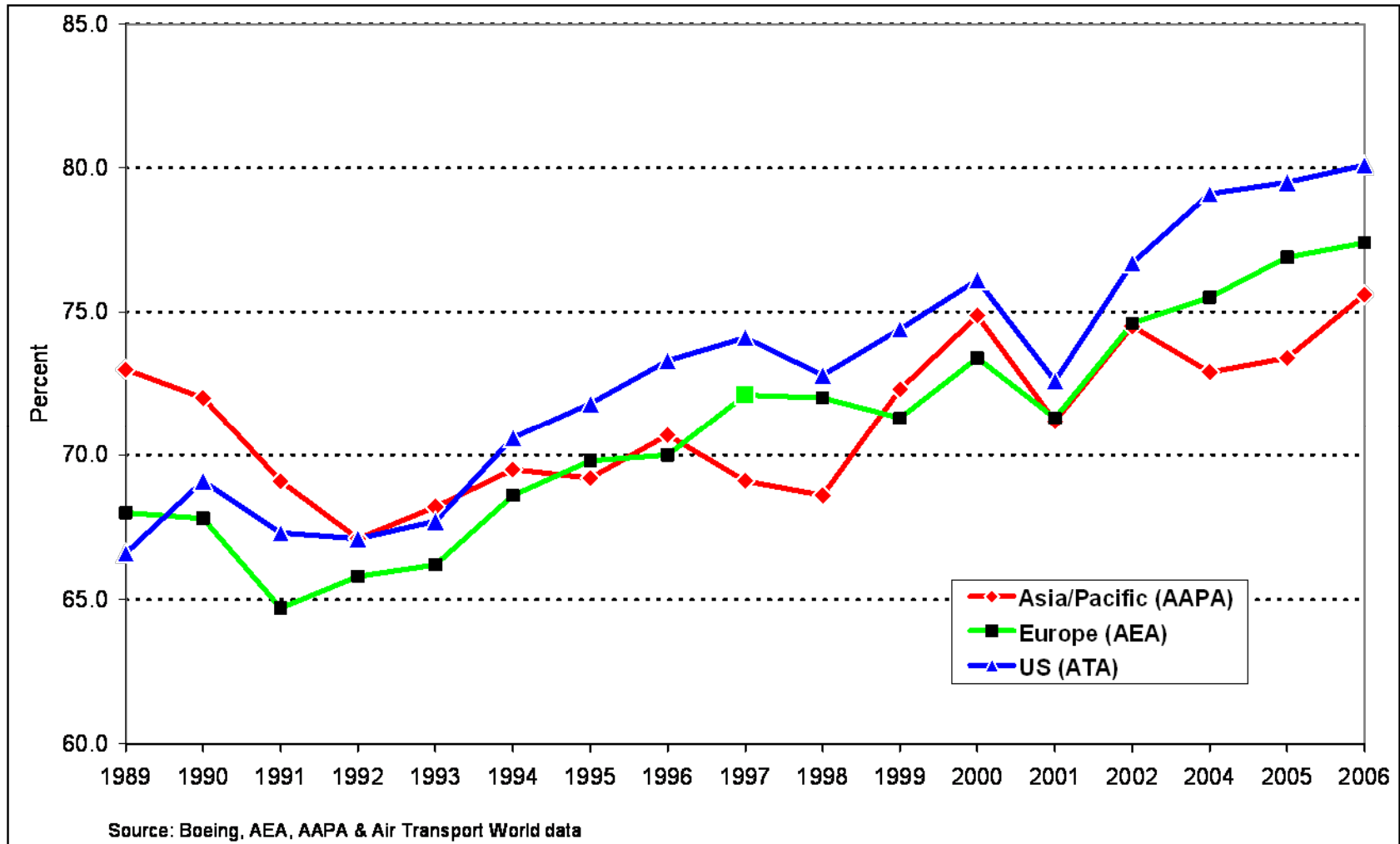
World scheduled airline debt/equity ratio



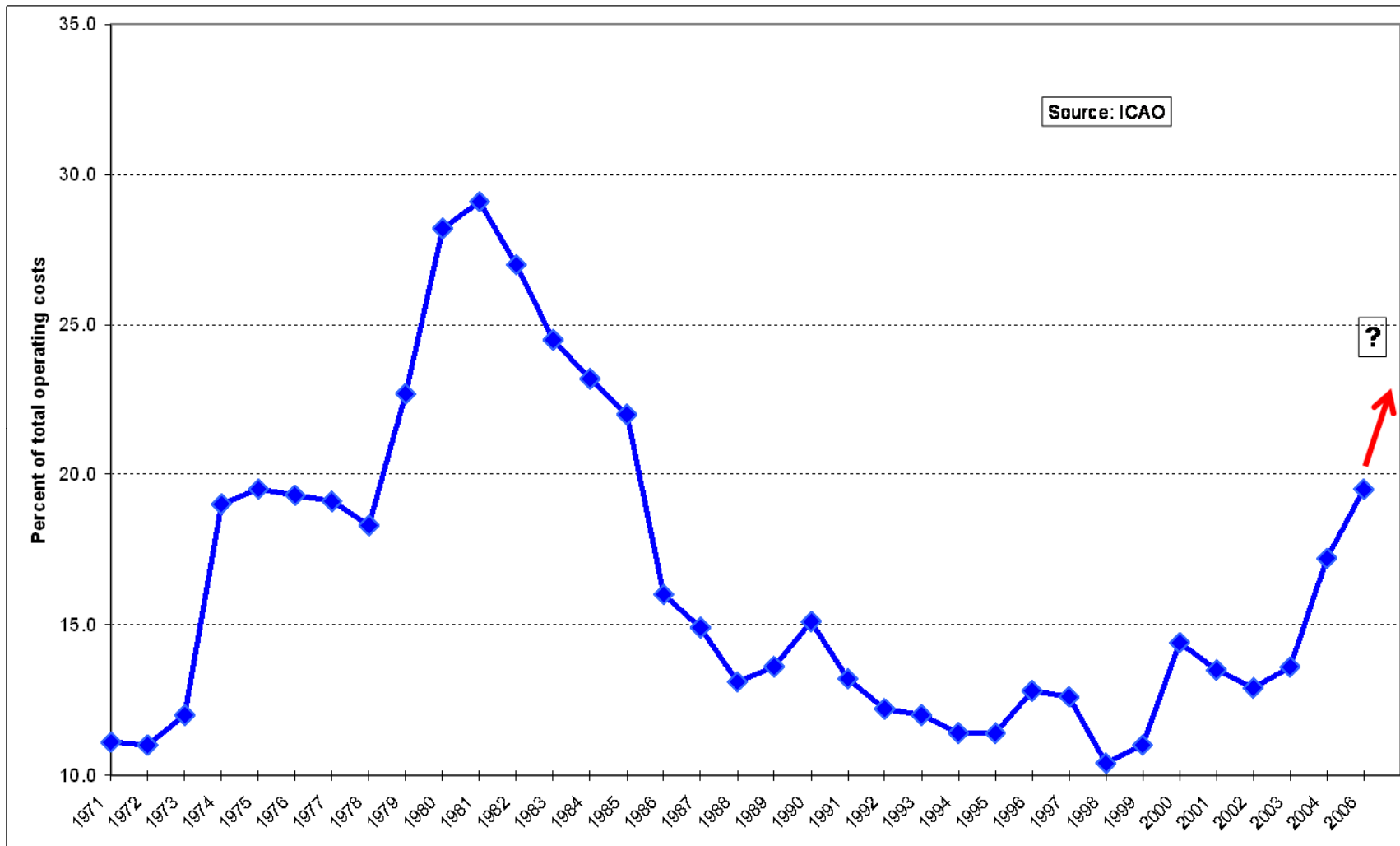
Breakeven Load Factor

- **Weight load factor required to equate total traffic revenues with total operating costs**
- = Weight load factor ÷ operating ratio**
- = costs/ATKs x RTKs/Revenues**
- = costs/ATKs ÷ Revenues/RTKs**
- = unit costs ÷ Yield**

World scheduled airline load factor trends by region of carrier



World airlines: share of fuel in total costs



Constraints: Fuel prices

- ❑ Limited impact of current high fuel prices on the world economy, and thus air traffic growth rates
- ❑ Some reduction in demand from high fuel surcharges, but more than outweighed by low cost airline growth
- ❑ Era of \$50-90 crude oil may lead to:

Economical extracting of alternative (non-OPEC) supplies

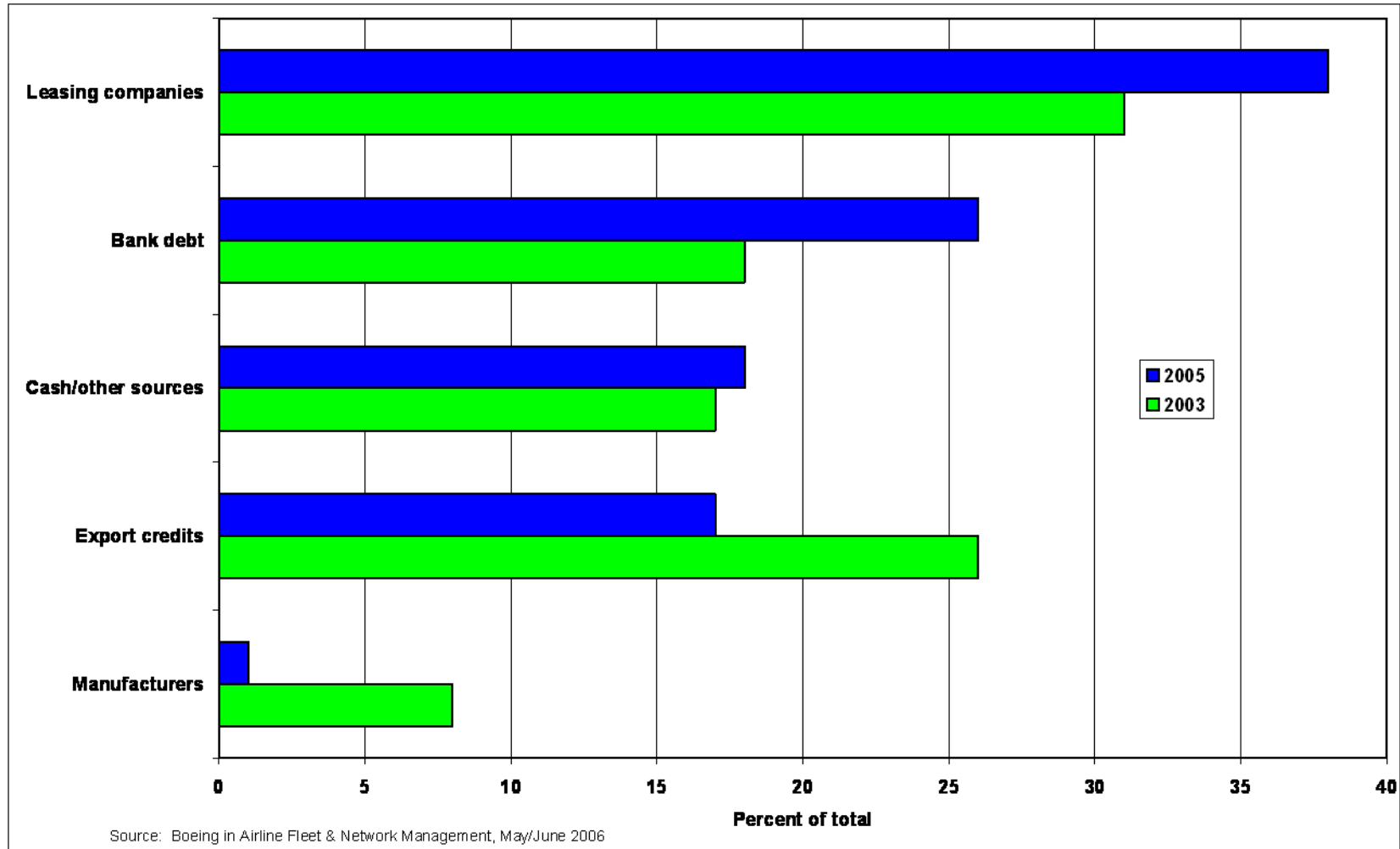
Economical application of known technologies extracting of alternative (non-OPEC) supplies

Economical application of known technologies to engine and aircraft design for greater fuel efficiency

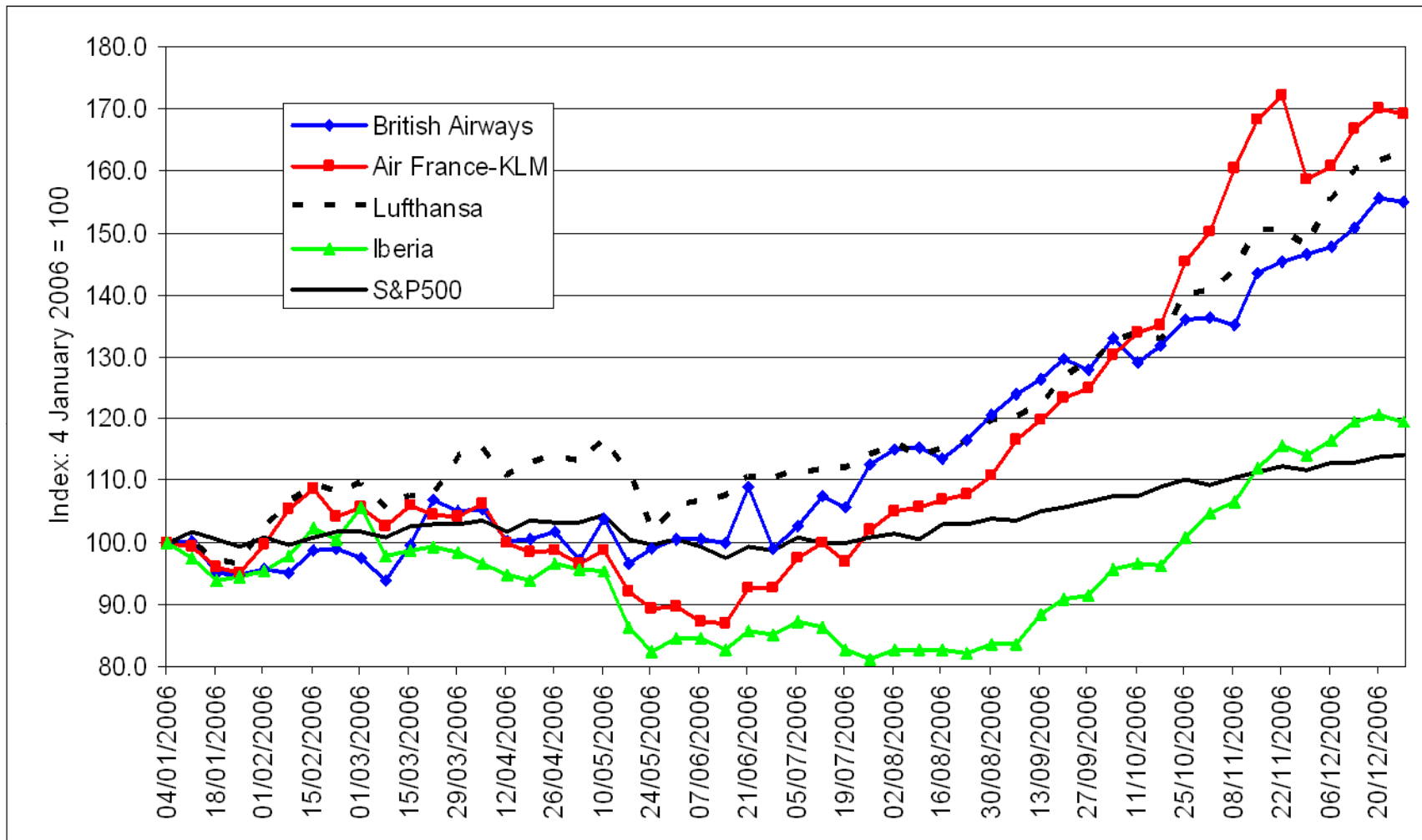
Environmental constraints

- ❑ **Local noise concerns: major airports attract housing and industry**
- ❑ **Local air quality regulations: coming soon from Brussels; a condition for new (short) runway at London Heathrow**
- ❑ **Climate change: air transport currently only small contribution, but greater impact at cruise altitude**
- ❑ **Proposals for aircraft engine emissions trading and an emissions tax unlikely to impose excessive cost on industry: already coping well with fuel price escalation**
- ❑ **Difficult to achieve future fuel efficiency increase in excess of traffic growth rates: but laminar flying wing estimated to give 70% reduction in fuel burn per tonne-km vs existing aircraft**

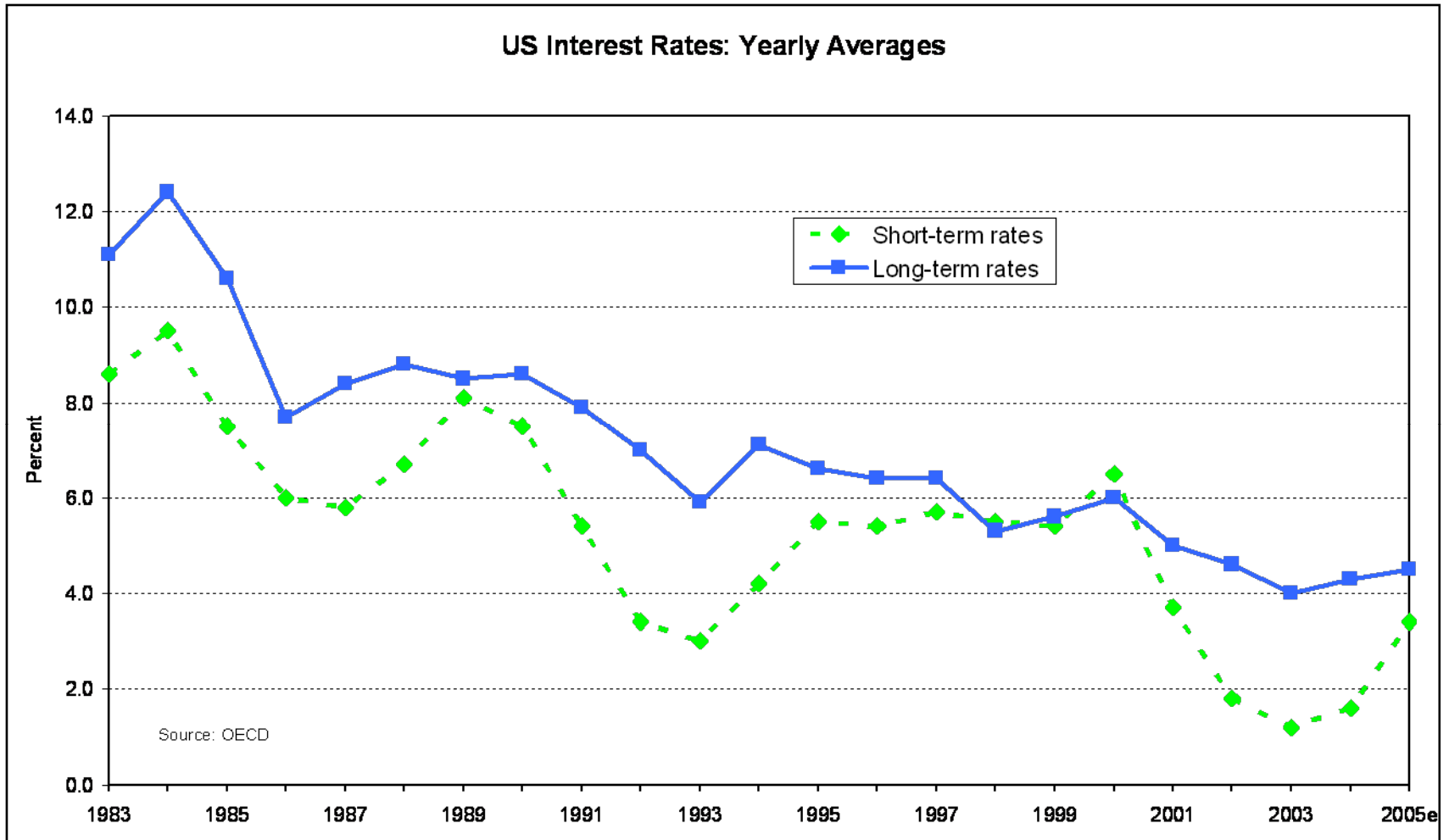
Sources of aircraft financing for Boeing deliveries



Major EU airline stock/share price trend vs S&P500



US Interest Rate Trends



Airline Industry Prospects

- ❑ **Long-term growth looks assured, unless environmental taxes/permits severe**
- ❑ **Short-term: next economic recession?**
- ❑ **Progress on liberalisation: US/EU?**
- ❑ **More cross-border mergers?**
- ❑ **Fuel prices remain high?**

IATA Forecasts: short/medium term

International passenger-kms

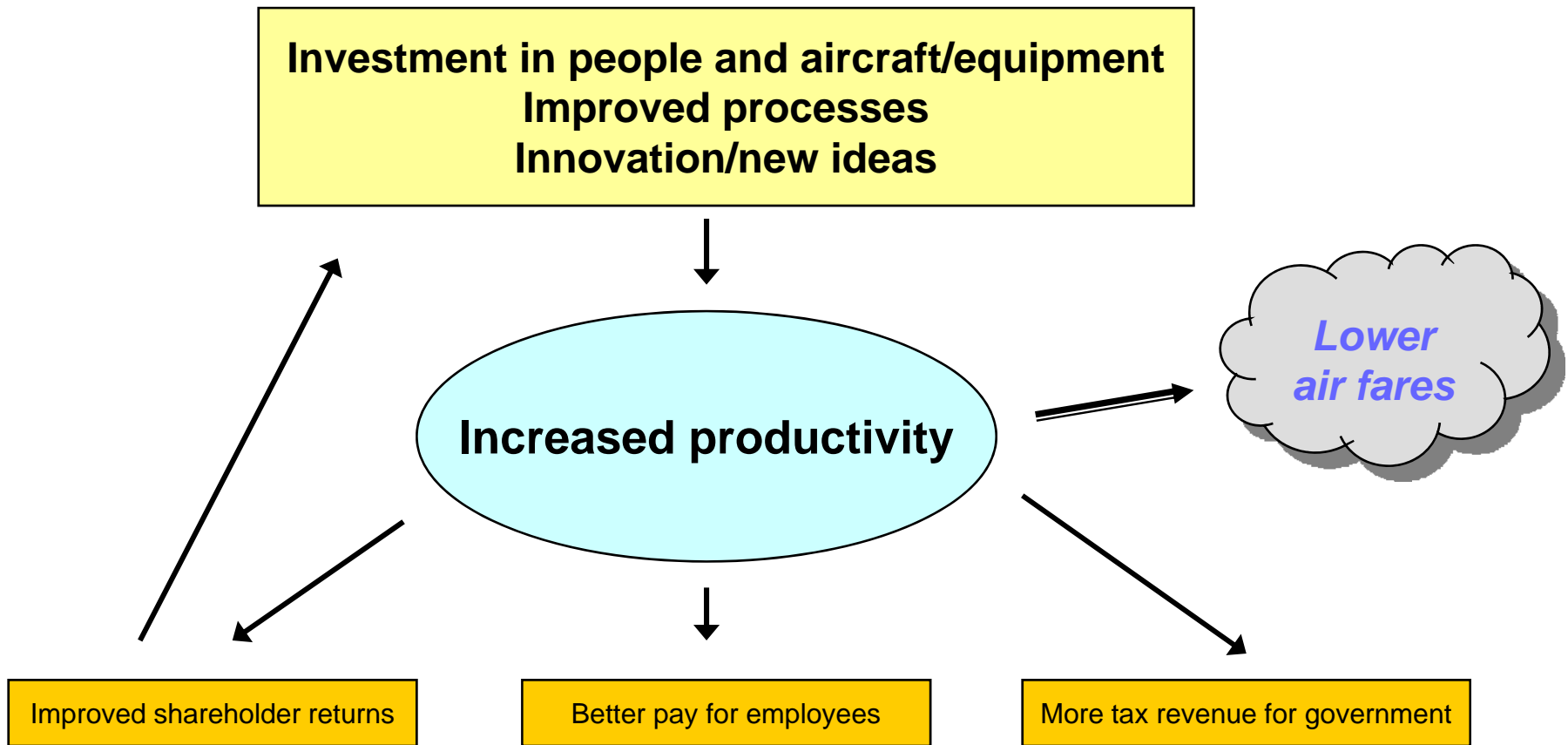
	<u>Estimate 2005</u>	<u>% pa 2005-09</u>
Total international	6.7	5.6
North Atlantic	5.0	5.3
Trans Pacific	7.4	5.8
Europe-Asia/Pacific	6.8	5.9
Europe-Middle East	8.4	6.6
Within Asia/Pacific	8.7	6.8
Within Europe	5.7	5.1

Source: IATA Outlook, 31 October 2005 (latest available)

Aircraft Manufacturer Forecasts – Long-term (Passenger-kms)

<i>Av. annual growth: 2004/05 to 2024/25</i>	<i>Airbus</i>	<i>Boeing</i>
Intra-Europe	4.1%	3.4%
Europe - North America	4.9%	4.6%
Asia - North America	6.3%	6.0%
Europe - Asia	5.9%	5.4%
Domestic China	8.7%	8.8%
Total World	5.3%	4.8%

Transforming the business



Sources of productivity growth

- ❑ **Economies of scale**

 - Increased aircraft size*

 - Larger airlines? (mergers/alliances)*

 - More specialisation*

 - High passenger load factors*

- ❑ **New technology**

 - Faster aircraft / shorter turnrounds*

 - Simpler processes*

 - Improved aircraft/engines (eg B787/A350)*

 - e-commerce (e-ticket, web based distribution, CRM)*

 - RFID (bags/cargo), Self-service check-in, ACARS etc*

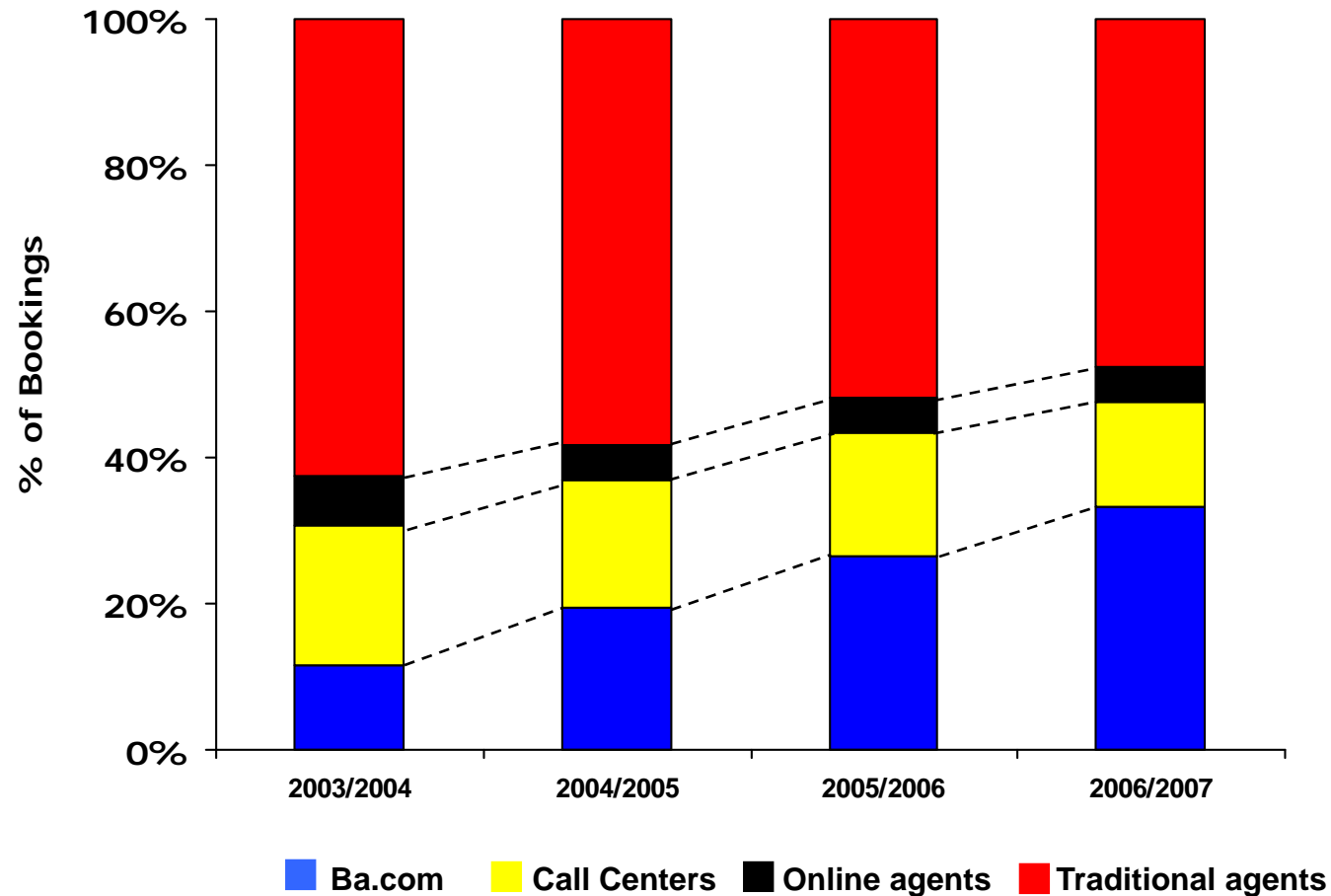
 - Biometrics*

Lessons from Low Cost Carrier business model?

SAS Status 2002 Targets

	<u>2002</u>	<u>Target</u>
Aircraft utilisation (hrs/aircraft)	7.5	9
Crew utilisation (hrs/pilot/year)	490	600
Cabin crew utilisation (hrs/employee/year)	530	600
Aircraft overnight stops per year	800	500
Turnaround time (minutes)	40	30
Ground service costs (change)		- 10% to -15%
Maintenance costs (change)		- 10% to -15%

Channel shift: British Airways



Airline Outsourcing

- ❑ **Internal cost levels are uncompetitive**
- ❑ **Other firms have expertise and/or economies of scale to be more efficient and cost effective (even allowing for their profit)**
- ❑ **Future investments more easily sustained by others (eg GDS firms, and other IT)**
- ❑ **Make sure there are now and will be in future competing firms bidding for your business**

Negative factors for increased productivity

- ❑ **Lack of international standards in some areas**
 - ❑ **Need for increased security**
 - ❑ **Airport congestion:**
Limits to new runway construction; greater peaking in passenger terminal; surface access congestion
 - ❑ **Air Traffic Management:**
Congestion, too many centres, restrictive practices
 - ❑ **Environmental:**
Noise curfews and operational restrictions
Emissions caps and/or taxes
- Trade unions?**

IATA Industry priorities for 2006

- ❑ **Achieve 70% penetration of e-ticketing in BSPs by end 2006**
- ❑ **Secure commitment for use of CUSS at 15 new locations**
- ❑ **Achieve savings of \$1.3 billion in taxes, charges and fuel fees**
- ❑ **Secure \$1.5 billion of fuel savings through operations, new routings and infrastructure improvements**
- ❑ **Launch seven new BSP/CASS operations**

London to New York in a Super Constellation in 1950s: *Piston-engined fuel efficiency (same fuel/seat-km as B777)*

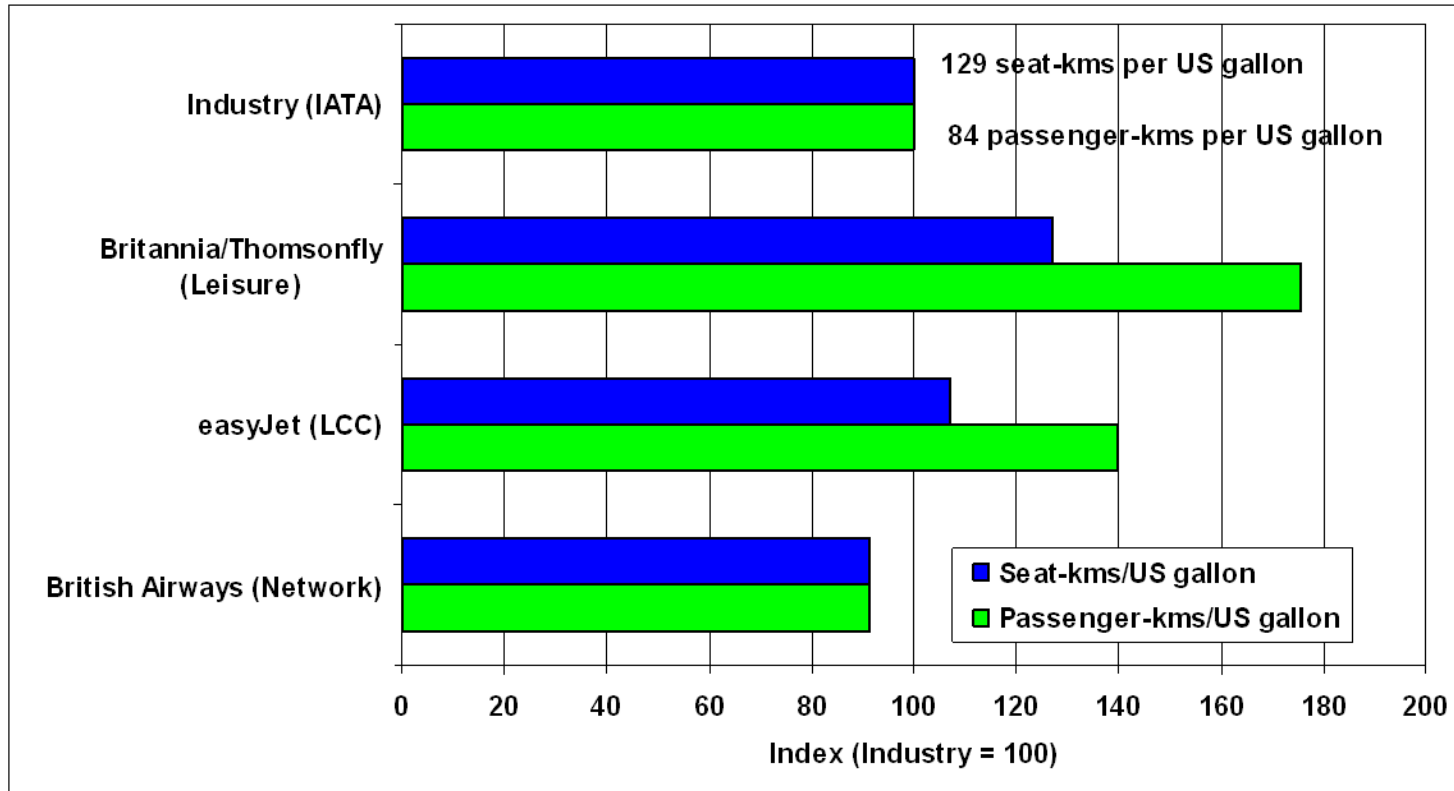


Source: Ralph M
Pettersen website

**Pressurised cabin,
but expensive, slow, limited range and not always reliable**

Selected airlines: fuel efficiency in 2004

Domestic and intra-EU routes



Marked advantage from higher load factors and seat density (LCCs and leisure) and larger aircraft (leisure)

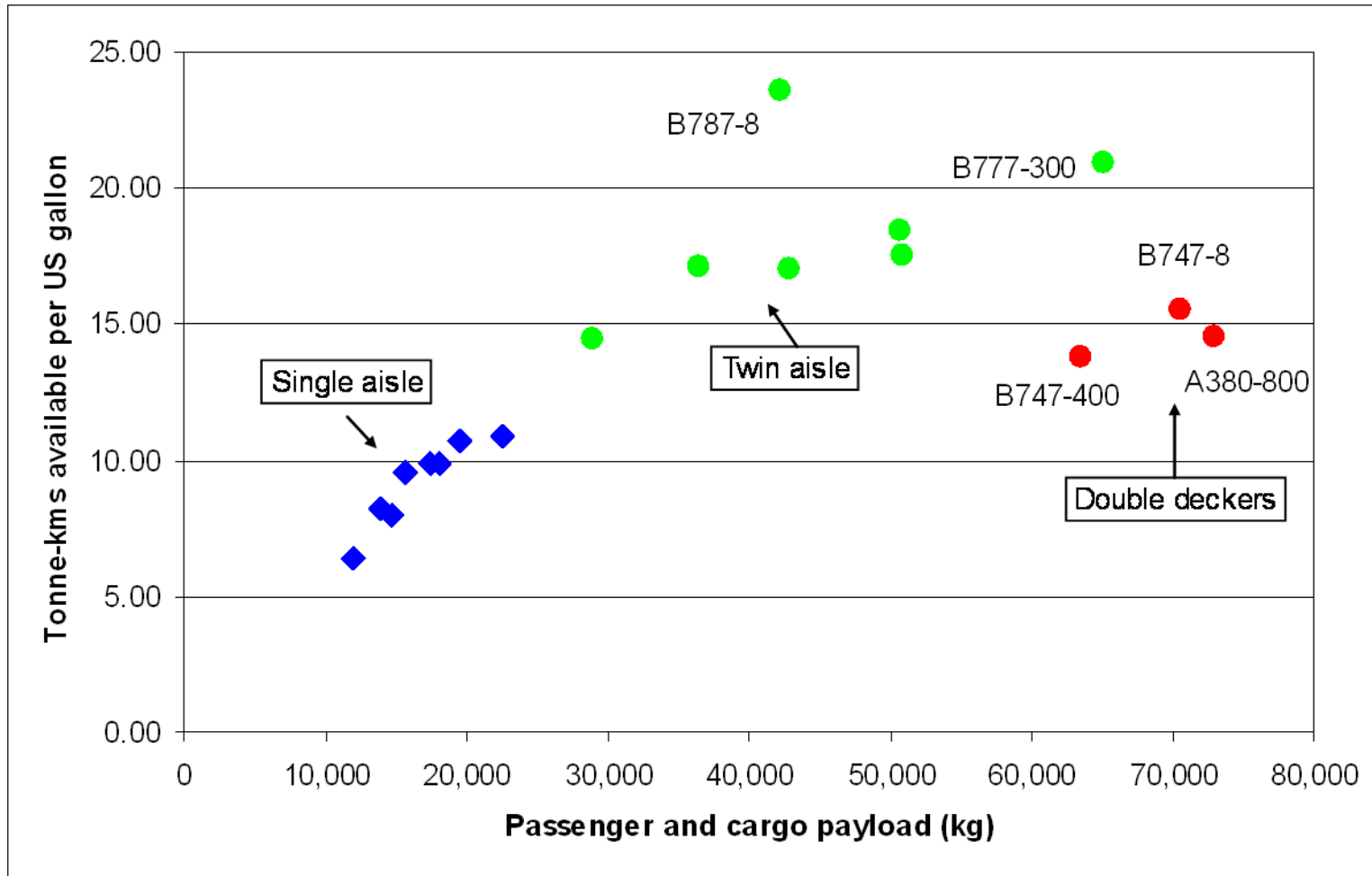
Source: Morrell (2006)

Lower deck cargo capacities: selected long-haul passenger aircraft types

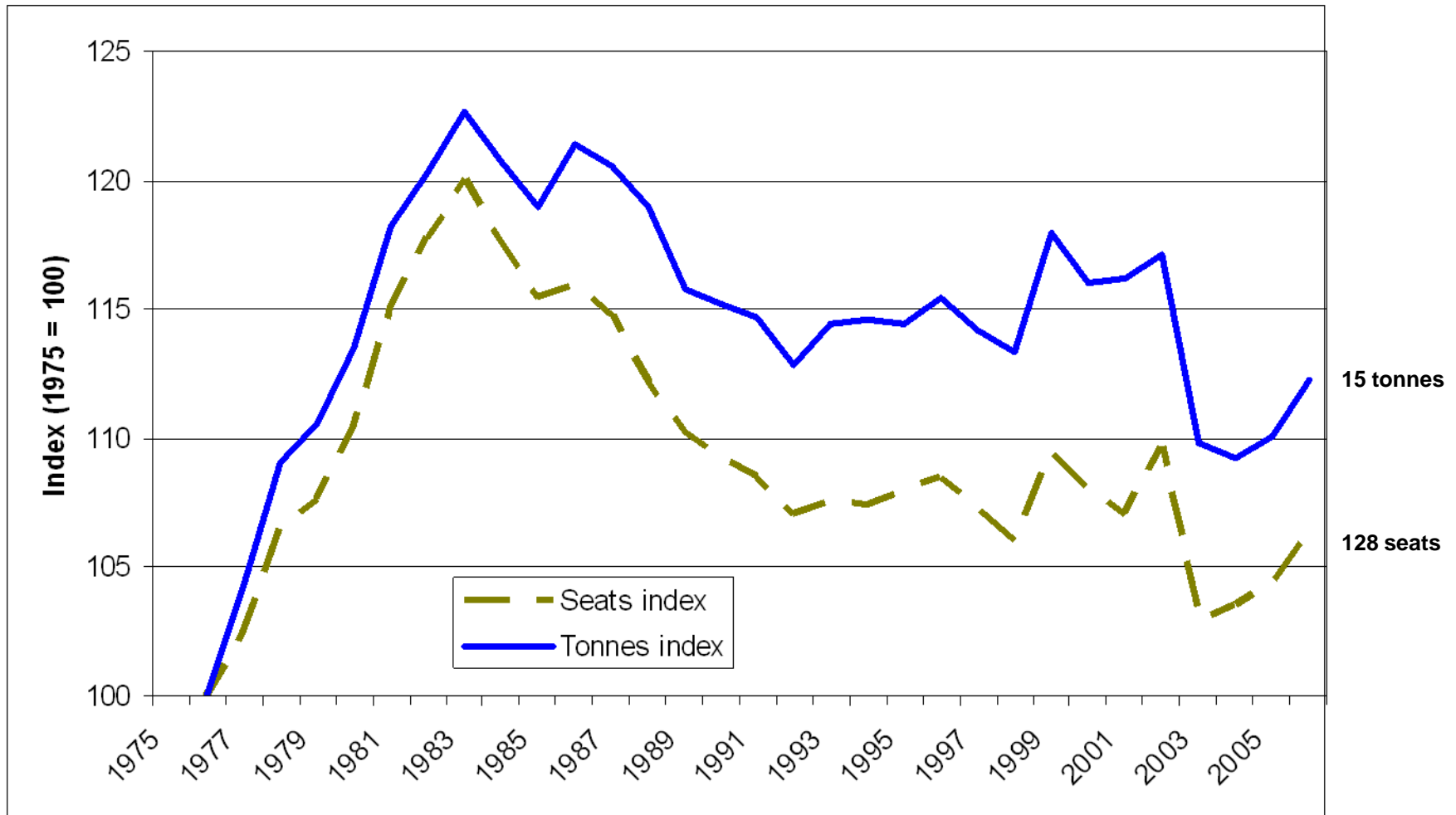
	<i>Total payload (t)**</i>	<i>Tonnes* @ 167 kg/cu.m</i>	<i>% total payload</i>
B767-200	29	10	35.4
B767-300	36	14	38.2
B787-8	42	17	40.6
A330-200	43	17	39.0
B777-200	51	20	38.7
A340-300	51	20	39.9
B747-400	64	20	32.2
B777-300	65	27	41.5
B747-8	71	22	31.5
A380-800	73	16	21.3

* Cargo only; **passengers, baggage and cargo

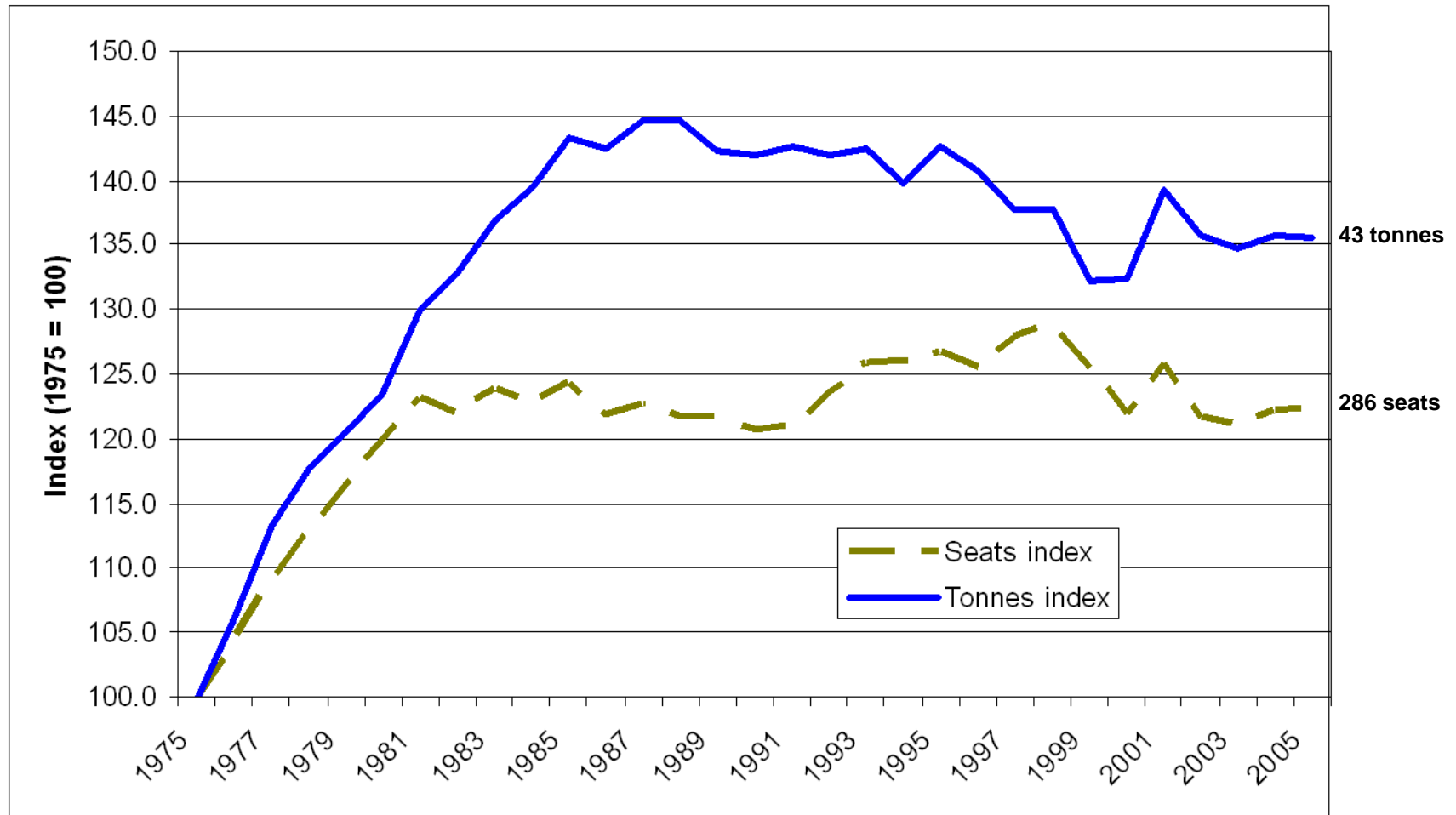
Fuel efficiency versus aircraft size by aircraft type



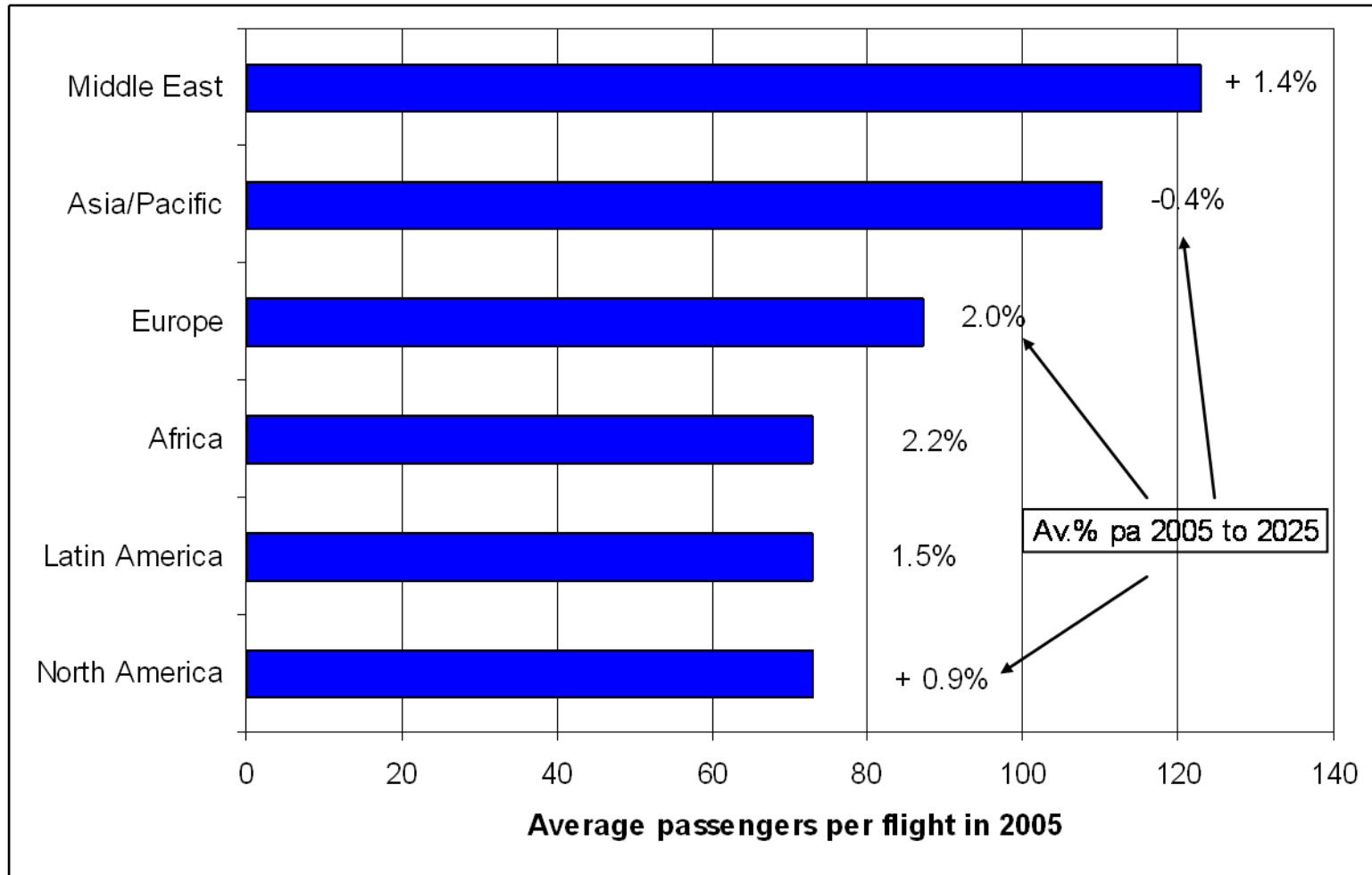
Capacity per flight: AEA member airlines: Intra-European routes



Average seats per flight: AEA and selected airlines: all long-haul routes



Airports Council International forecasts of average passengers per flight



Recent average aircraft size forecasts

- ❑ Boeing: hardly any increase over next 20 years
- ❑ Airbus: +20% over next 20 years
- ❑ Rolls-Royce: +0.6% pa over next 20 years (about 13% up overall)
- ❑ Frankfurt/Main Airport: +1.2% pa from 2005 to 2020
- ❑ London Heathrow between 2000/01 and 2012/13
 - Domestic: +1.0% pa*
 - Short-haul: +1.3% pa*
 - Long-haul: +1.7% pa*

Summary of Main Points

- ❑ **Poor industry profitability and return on capital**
- ❑ **Highly geared: large swings in profits**
- ❑ **Longer-term traffic growth prospects good**
- ❑ **Continued advances in productivity needed to keep costs in check:**

Lessons from LCC business model

but could be constrained by lack of airport and ATC capacity as environmental measures and taxes become more widespread