



Introduction: The Aviation Value Chain

Istanbul Technical University
Air Transportation Management, M.Sc. Program
Aviation Economics and Financial Analysis

Module 1

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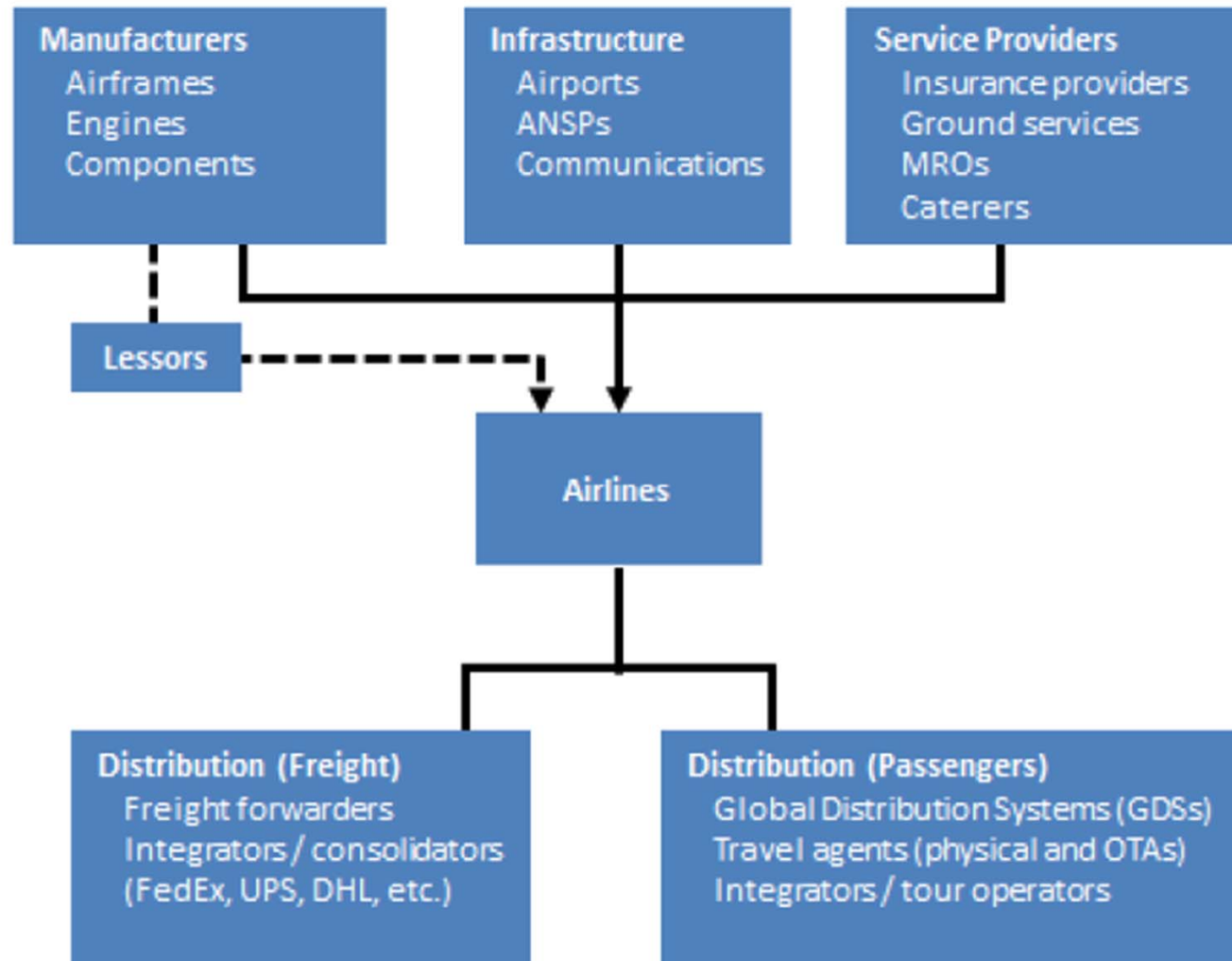
Outline

- **The aviation value chain**
- **Emerging role of ancillary products/ services**
- **The role of aviation**
- **The social rate of return**
- **Performance in the aviation value chain**
 - Investment
 - Rate of return
 - Credit rating

The aviation value chain



The commercial aviation value chain



The aviation value chain

- **Made of a number of interlinked pieces**
 - Upstream and downstream
- **Supply chain is not vertically integrated**
 - I.e., Airlines have limited investments in other sectors of the value chain
 - Some past investments were divested due to regulation
- **Current airline investments include:**
 - Fuel and ground handling services, cargo facilities, some airport terminals

The aviation value chain – cont.

- **Even without vertical integration, there are standards and operating procedures across the value chain members (IATA, ICAO)**
 - This has lowered industry costs and increased customer service levels
- **E.g., IATA has established standards for:**
 - sale and exchange of travel documents
 - clearing of financial transactions between value chain partners
 - Records for travel documents

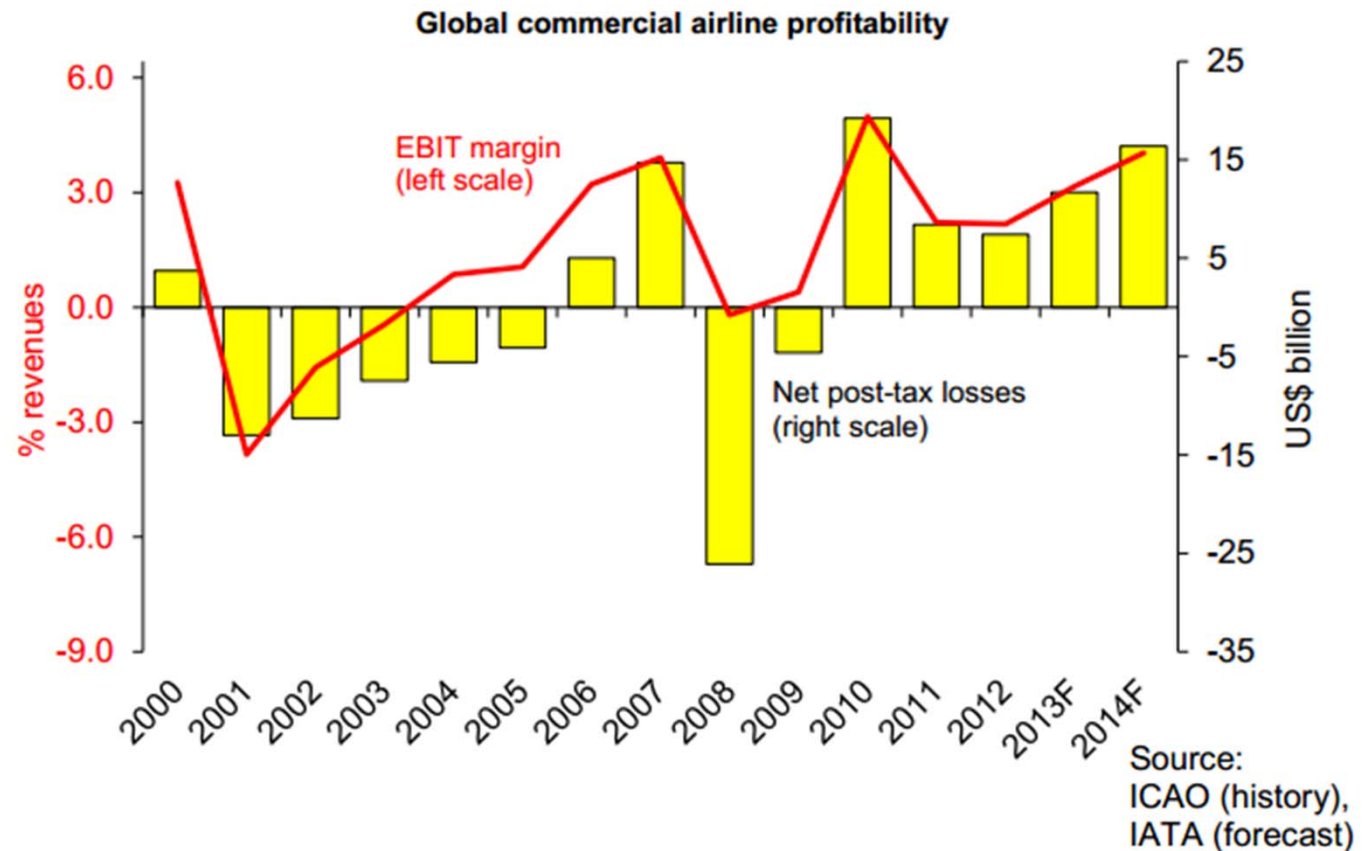
Relative performance in the aviation value chain



Airline Industry Financial Performance

- Airline financial performance is highly susceptible to economic cycles.
- In 1970-2011, the industry's net profit margin (net of taxes and debt servicing costs) was 0.8%.
- Recently, the best net profit margin was 3.2%, insufficient to cover 7-8% capital costs
- The financial crisis resulted in a net operating loss of more than US\$25 billion in 2008

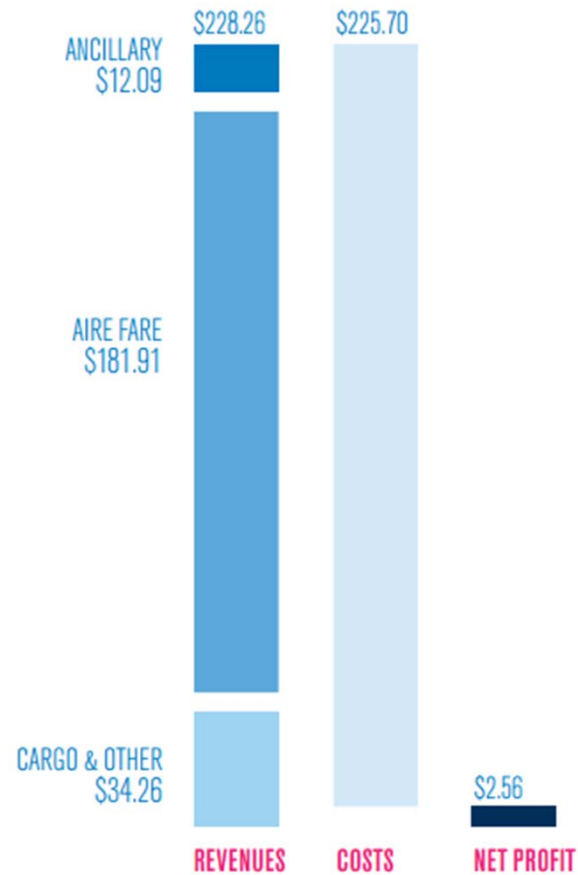
Airline financial performance is volatile



Source: International Air Transport Association (IATA), Financial Forecast, September 2013.

Worldwide Airline Financial Performance

CHART 4: 2012 WORLDWIDE AIRLINE FINANCIAL RESULTS PER DEPARTING PASSENGER

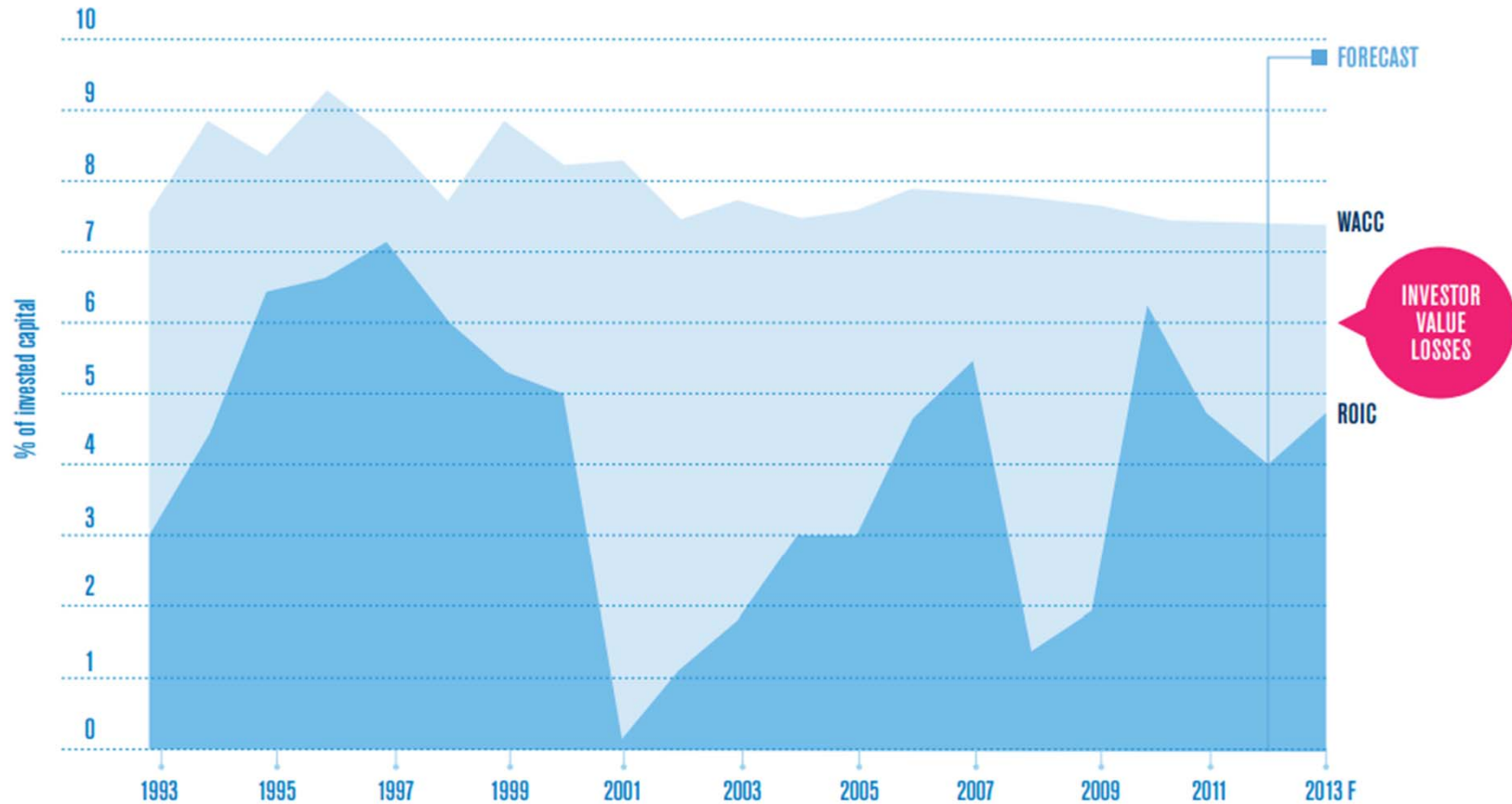


Source: Ancillary revenues from Idea Works 2012 estimate, other data IATA. Costs include operating items and debt interest.

Source: International Air Transport Association (IATA)

Airline Industry Rate of Return

CHART 5: RETURN ON INVESTED CAPITAL IN AIRLINES AND THEIR WACC

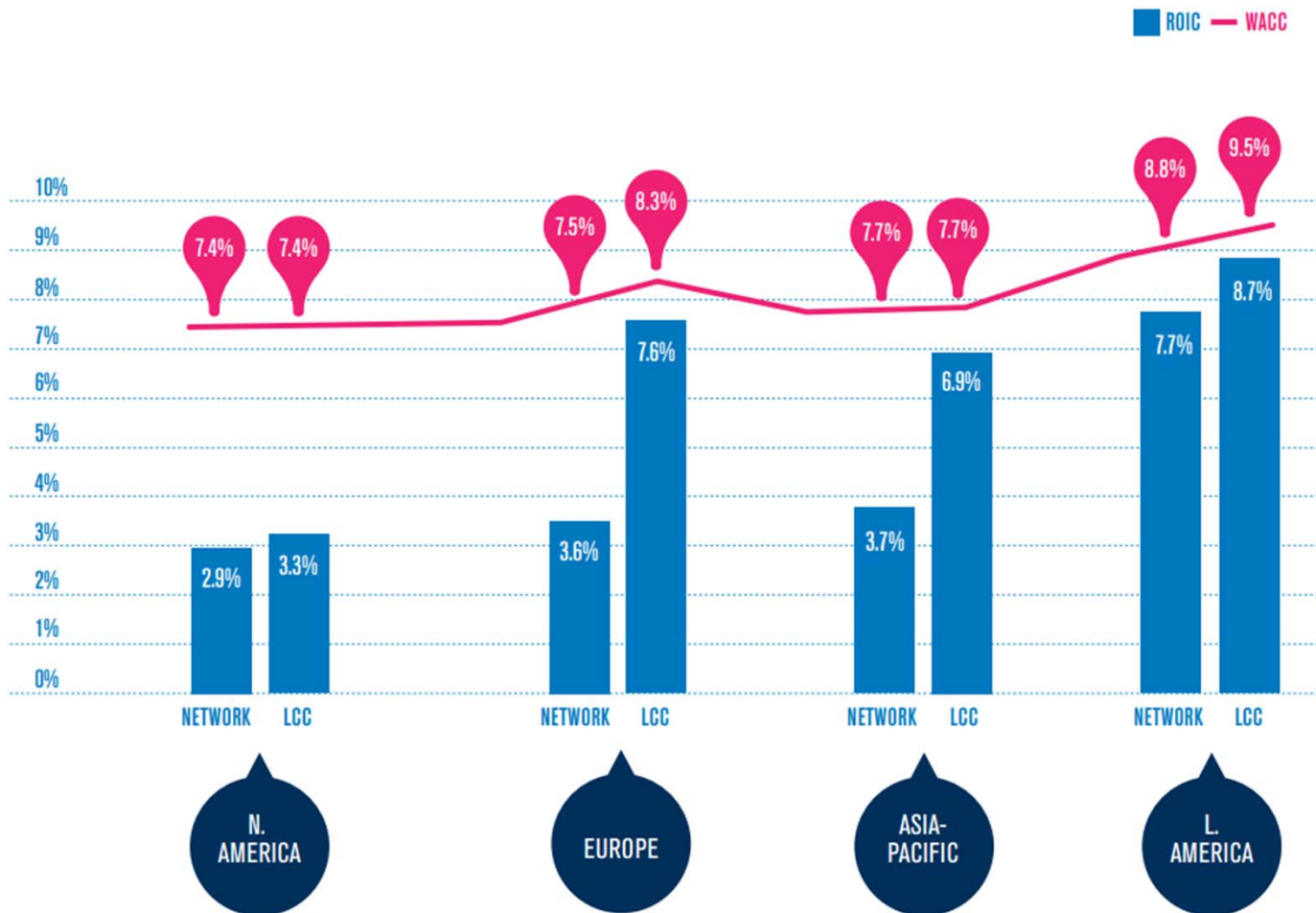


Source: McKinsey & Company for IATA

Source: International Air Transport Association (IATA)

Rate of Return by business model

CHART 9: ROIC AND WACC BY REGION AND BUSINESS MODEL, 2004-2011



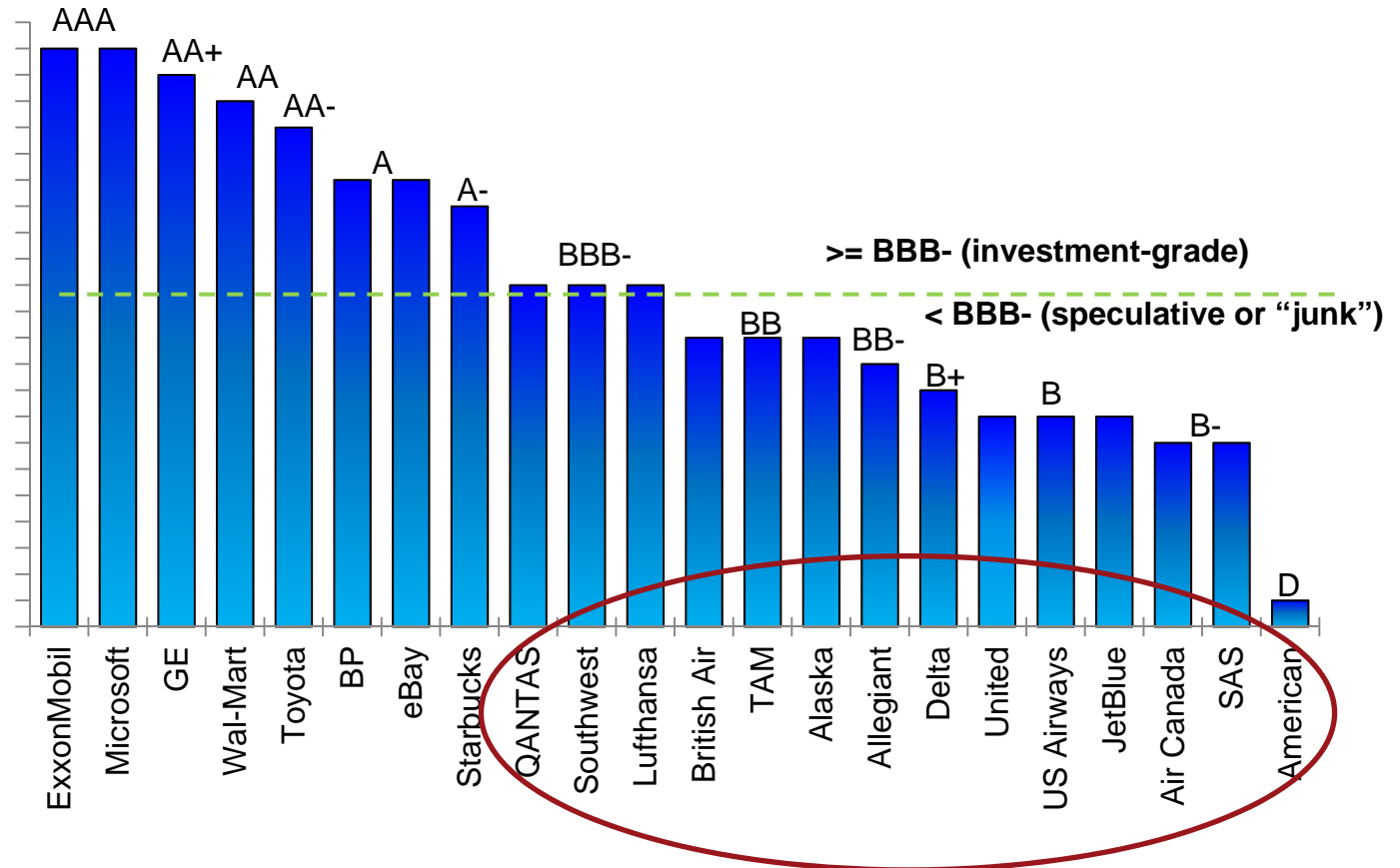
Source: McKinsey & Company for IATA

Source: International Air Transport Association (IATA)

Corporate Credit Rating (U.S.)

Credit rating of select airlines and U.S. companies

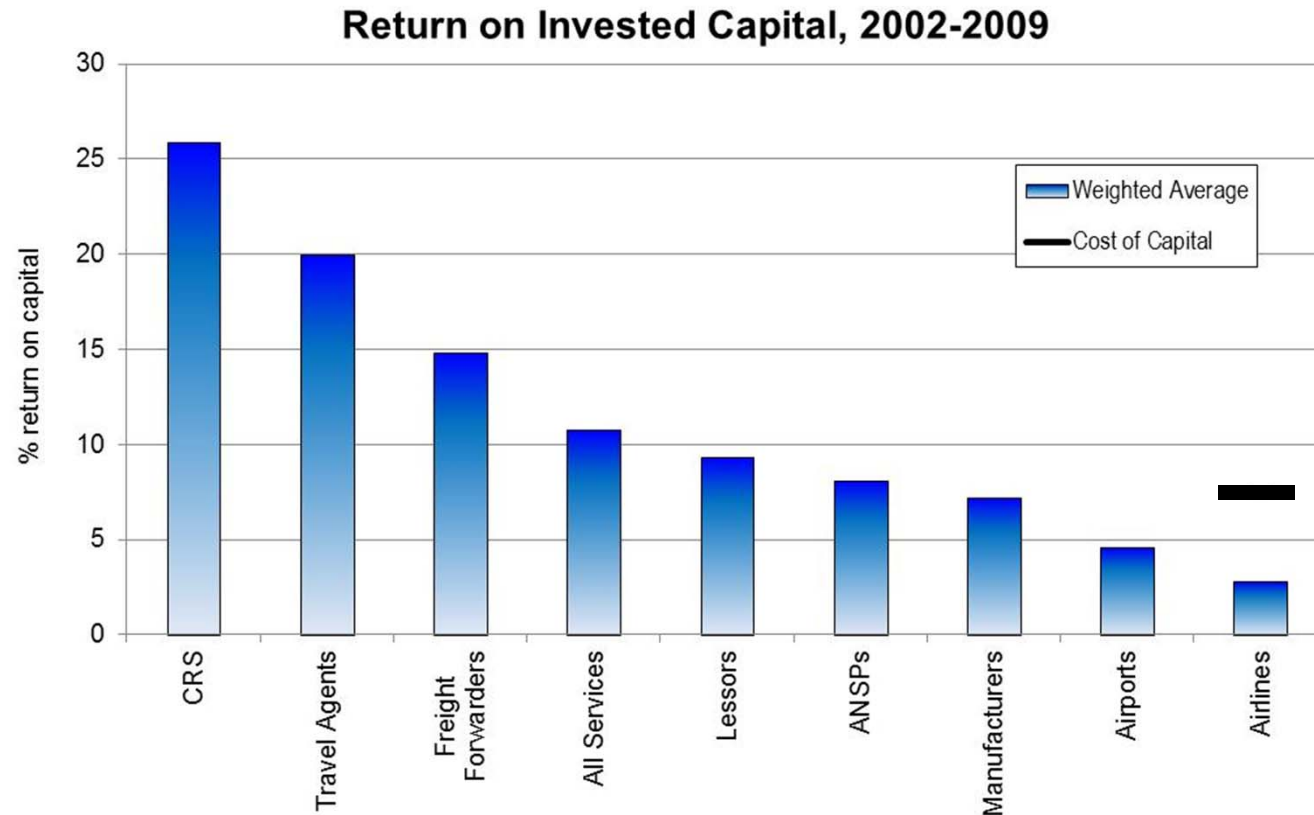
- Most airline credit ratings are junk grade.
- Many airlines have consistently ranked as speculative grade
- E.g., Delta, United, American Air Canada



Source: Airlines for America Presentation "A4A Industry Review and Outlook", November 2013

Return on Invested Capital: Aviation Value Chain

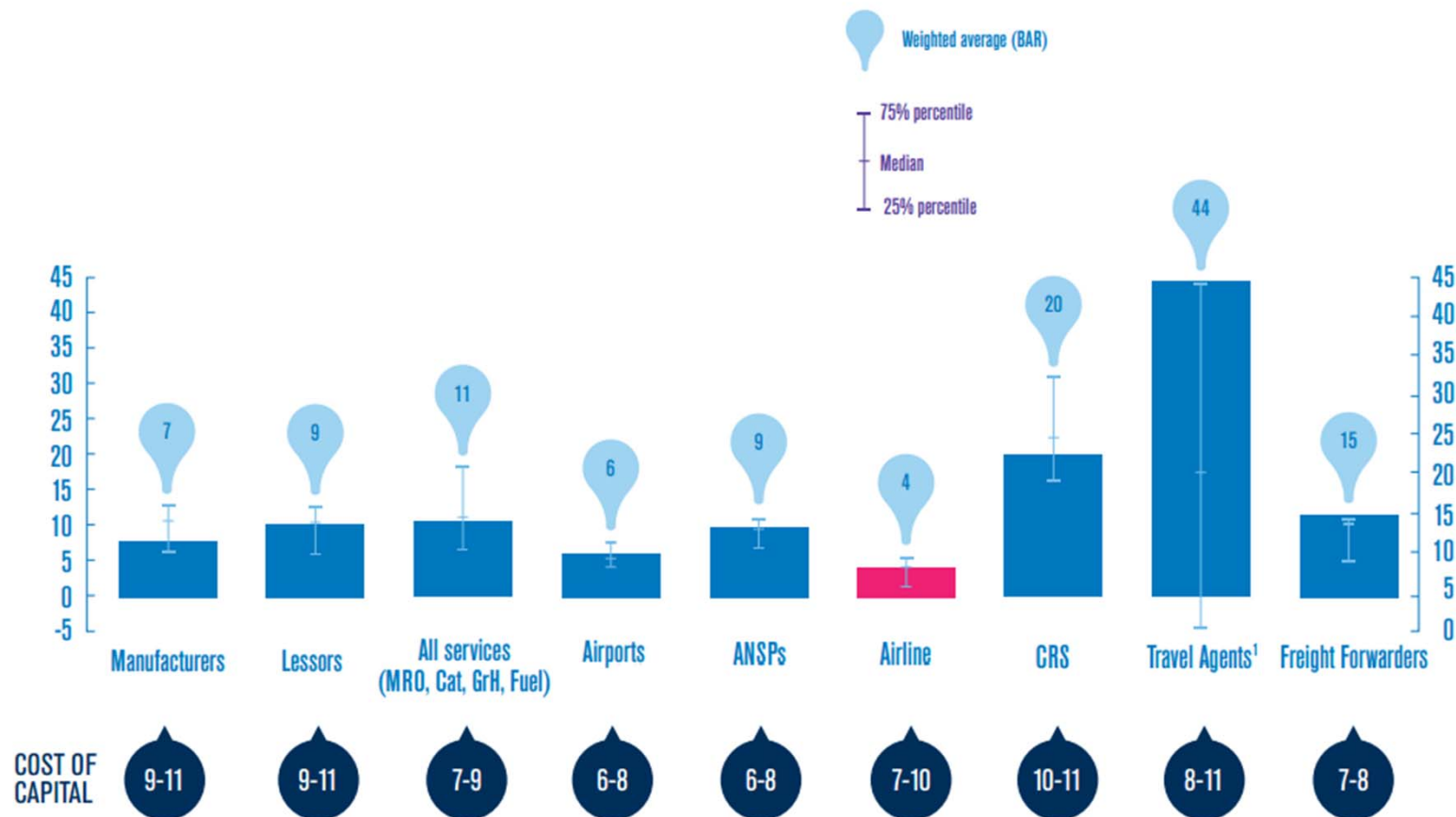
- Airlines have the lowest returns in the aviation value chain, well below that of travel agents and CRSs
- Airline returns are well below their cost of capital



Source: McKinsey & Company for IATA, 2011

Return on capital for the value chain

CHART 12: RETURN ON CAPITAL VARIES THROUGHOUT THE VALUE CHAIN
 ROIC excluding goodwill of sample, period 2004-2011, %



¹ Limited sample

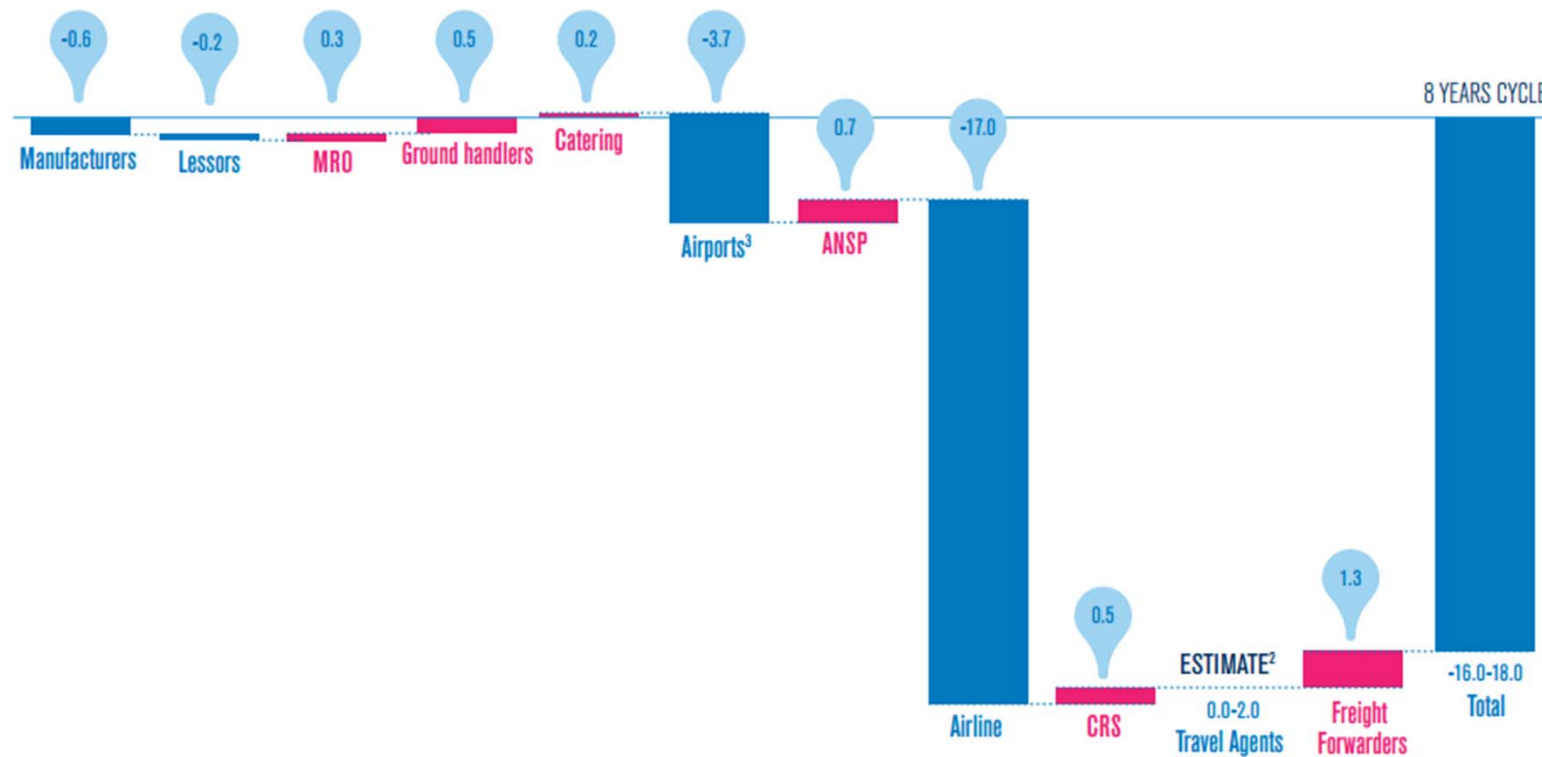
Source: IATA

Source: McKinsey & Company for IATA

Economic profits in the value chain

CHART 14: ECONOMIC PROFITS IN THE AIR TRANSPORT VALUE CHAIN (EXCLUDING FUEL AND LABOR)

Average economic profit¹, (ROIC-WACC) × invested capital, USD billion, 2004-2011



¹ Based on invested capital excluding goodwill, extrapolated to total industry

² Sample too small to give meaningful estimate

³ Economic profit for airport sector extrapolated based on weighted average of sample excluding AENA. AENA subsequently added back to sector estimate

Source: McKinsey & Company for IATA

Source: IATA

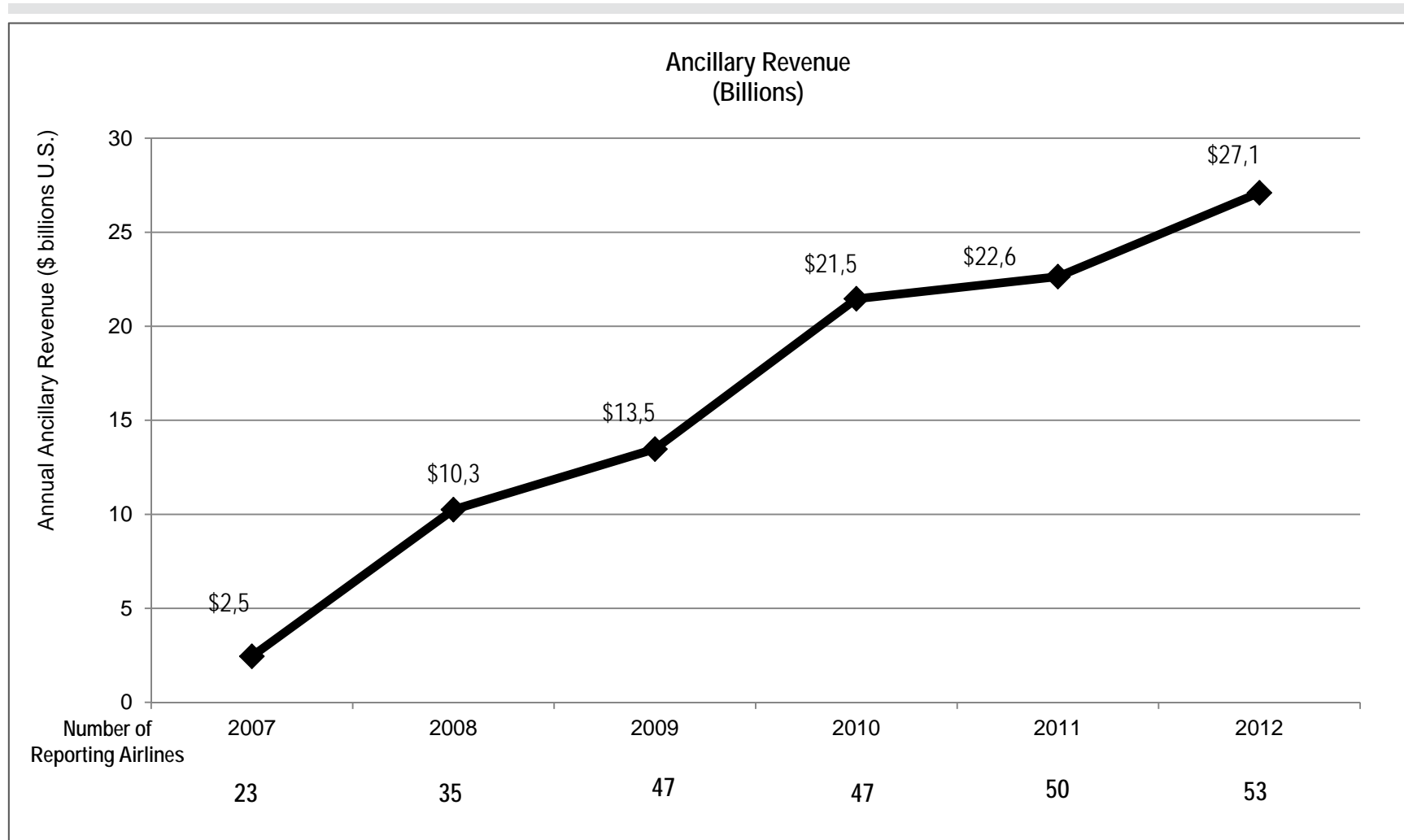
The emerging role of ancillary products/services



The growth of ancillary revenues

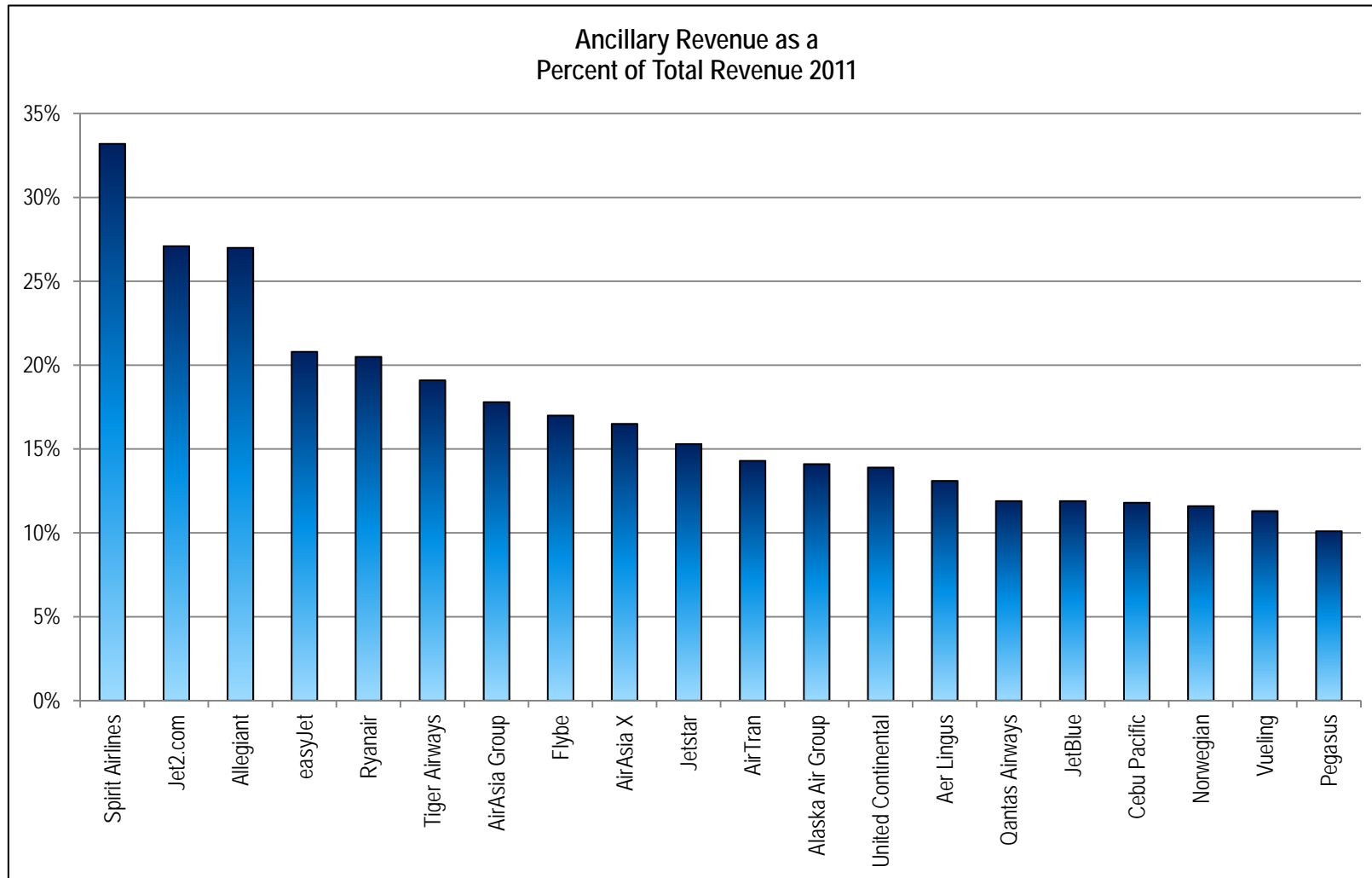
- **Airlines have identified elements of services that are of higher value to some passengers**
 - Seat selection, priority boarding, luggage checking, entertainment, etc.
- **Airlines are now monetising the value in these non-core services**
- **Growth in this revenue has been growing steadily**
- **A major source of income for LCCs and ULCCs**
 - New sources of revenue for legacy carriers

Ancillary Revenues



Source: The Amadeus Yearbook of Ancillary Revenue by IdeaWorks Company, 2012 and IdeaWorksCompany Press Release June 2013.

Ancillary Revenue



Source: The Amadeus Yearbook of Ancillary Revenue by IdeaWorks Company, 2012

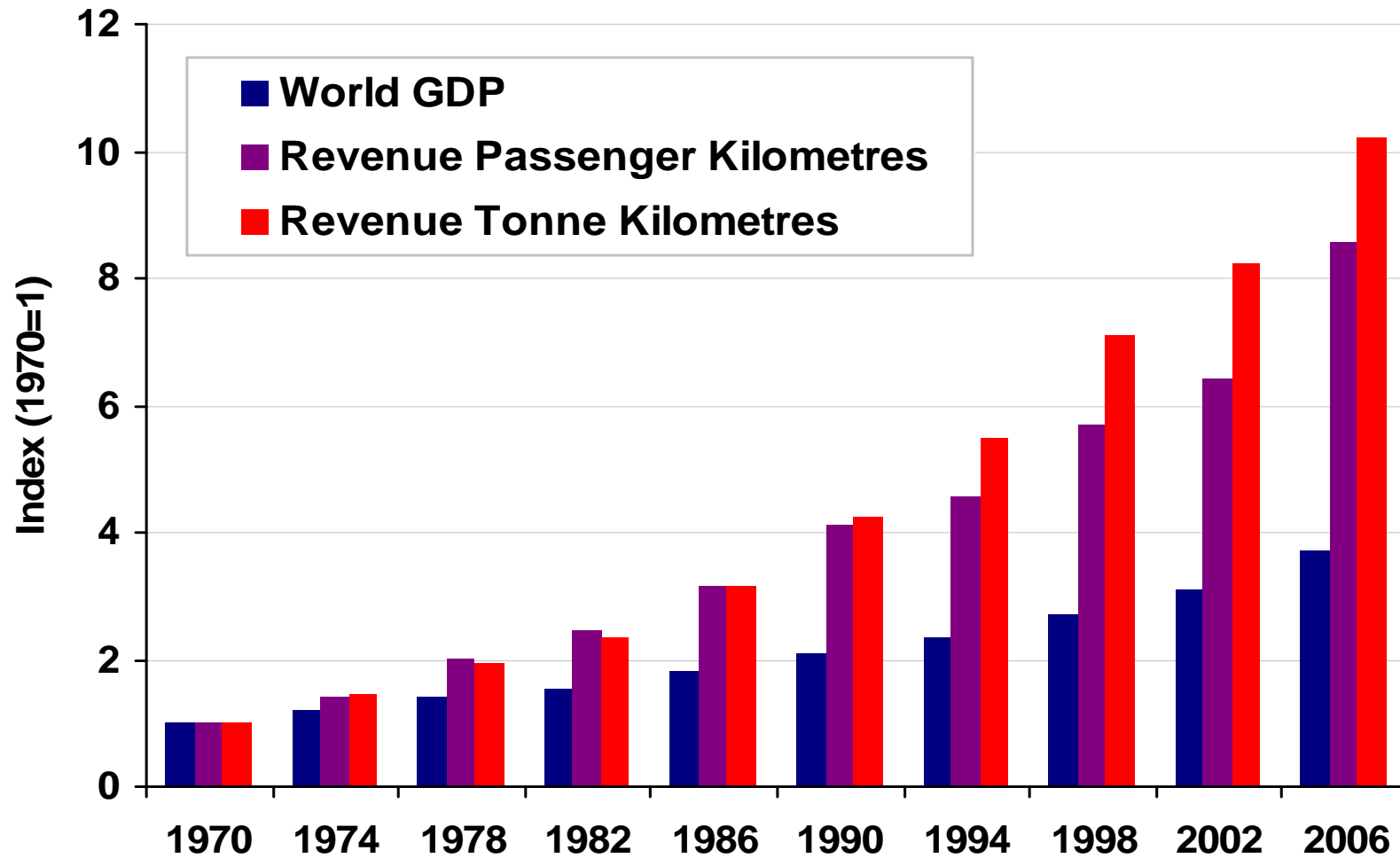
The benefit of ancillary revenues

- **Consumers can choose and pay for only the services they require**
- **Airlines can offer the core product at low prices**
 - marginal costs possibly
- **Carriers are starting to adopt a merchandising approach for service offerings**

The role of aviation



World GDP vs Air Traffic (Pax & Cargo)



Current Growth in Air Travel

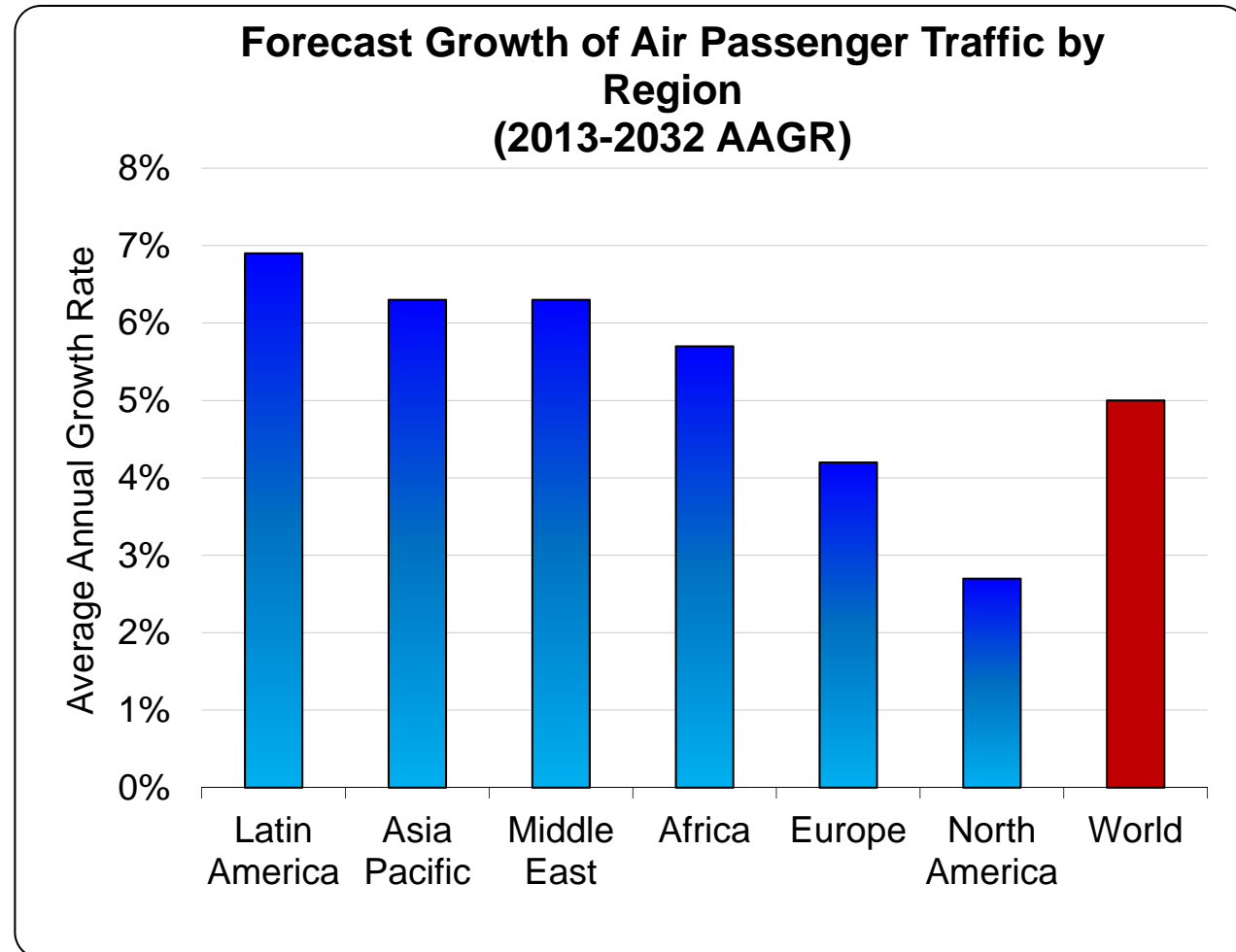
REGIONAL GROWTH IN PASSENGER-KILOMETRES PERFORMED (PKPs)						
(% change from previous year)						
Region of airline registration			Average annual growth		Forecast	
	2001 (PKP in billions)	2011 (PKP in billions)	2001-2011 (%)	2012 (%)	2013 (%)	2014 (%)
Europe	774	1385	6.0	4.2	4.4	4.8
Africa	66	118	6.0	5.5	6.2	6.0
Middle East	100	383	14.4	9.5	10.2	11.0
Asia/Pacific	806	1496	6.4	8.0	8.6	8.8
North America	1110	1434	2.6	2.3	3.1	3.5
Latin America and Caribbean	156	246	4.7	7.0	7.7	8.2
World	3011	5062	5.3	5.4	6.0	6.4

Source: International Civil Aviation Organization (ICAO)

Regional Air Passenger Traffic

Growth will occur in regions other than N. America

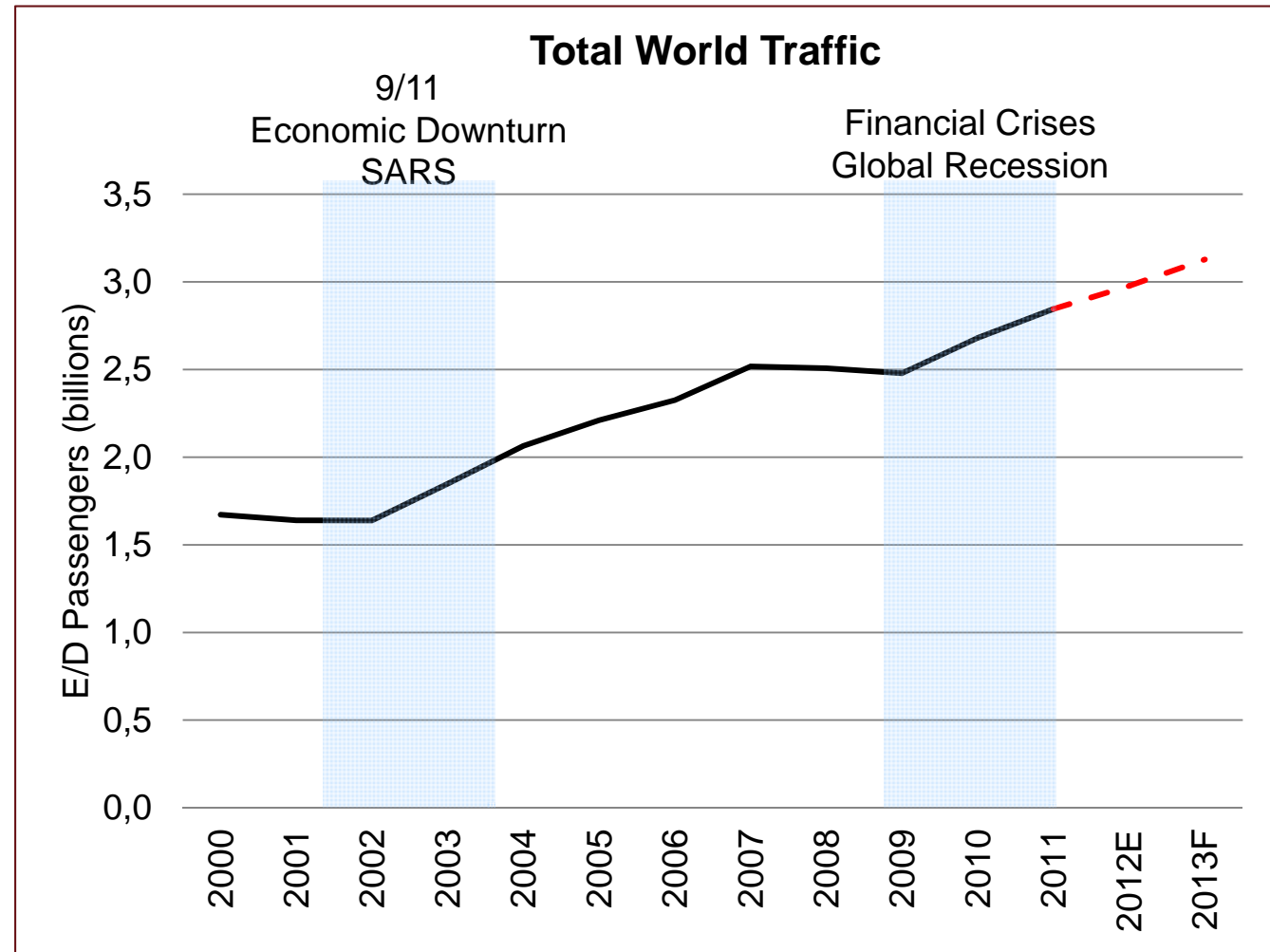
- Canada will be among the slowest growing regions in the world, falling well below world average
- FAA has lowered forecast for US:
 - from 2.6%
 - To 2.2%



Source: Boeing Current Market Outlook 2013-2032

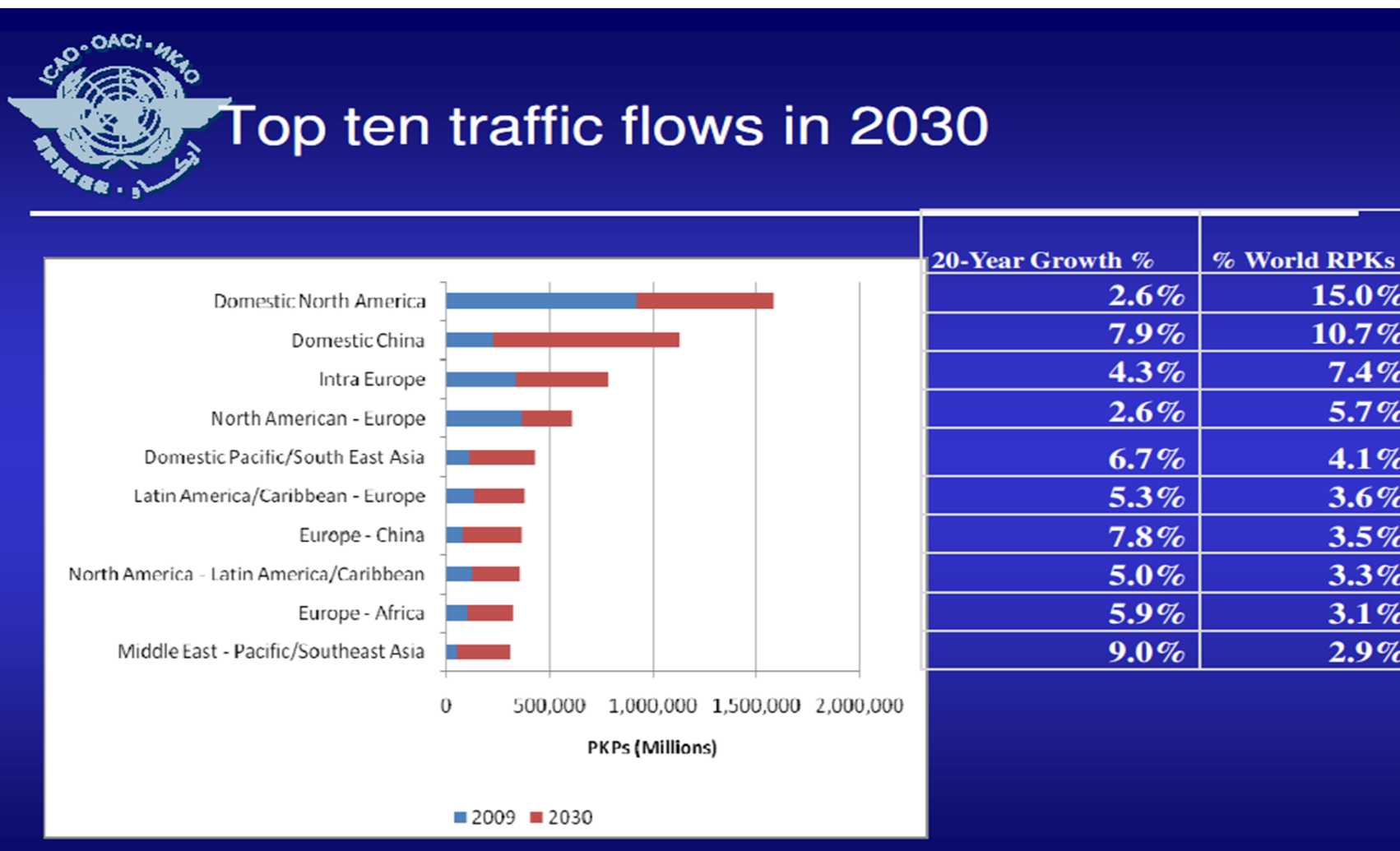
Global Air Passenger Traffic

- Air travel continues to grow, but has its ups and downs.
- ICAO still expects global traffic to reach 6.3 billion over the next 20 years (4.5% AAGR).



Source: International Air Transport Association (IATA) Fact Sheet, ICAO Facts and Figures.

Regional Markets



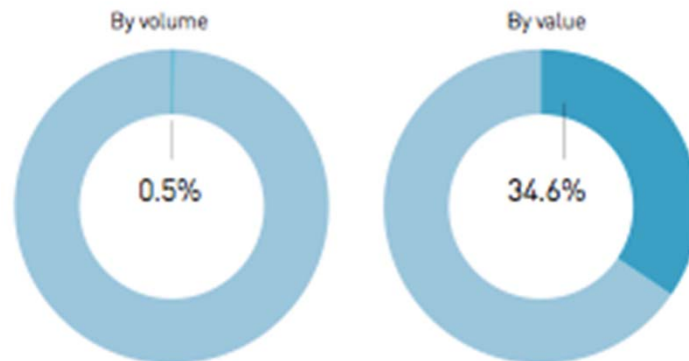
Source: International Civil Aviation Organization (ICAO)

Air Cargo

35%

Air transport carries around 35% of world trade by value and only 0.5% by volume²⁴

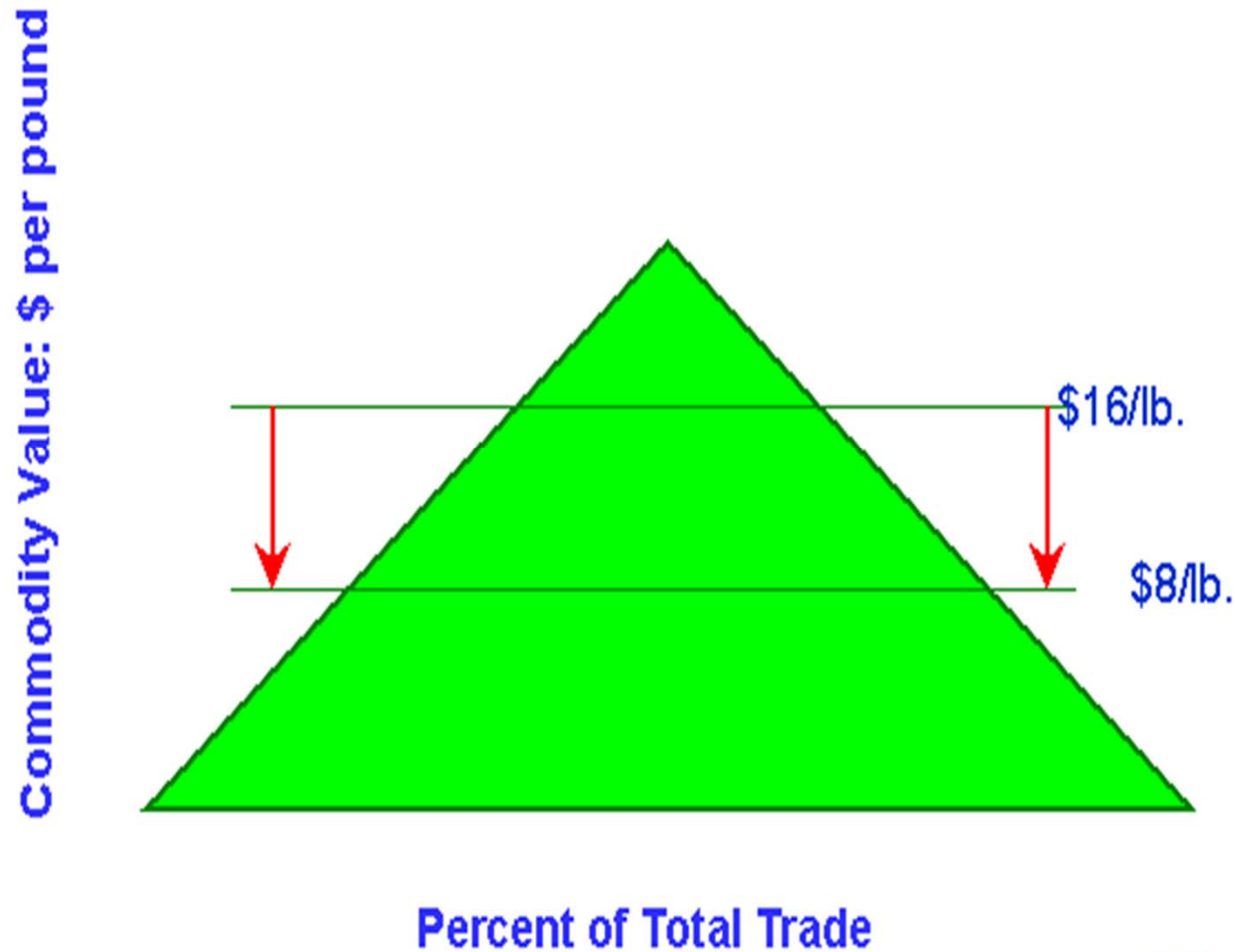
Proportion of global trade transported by air²⁹



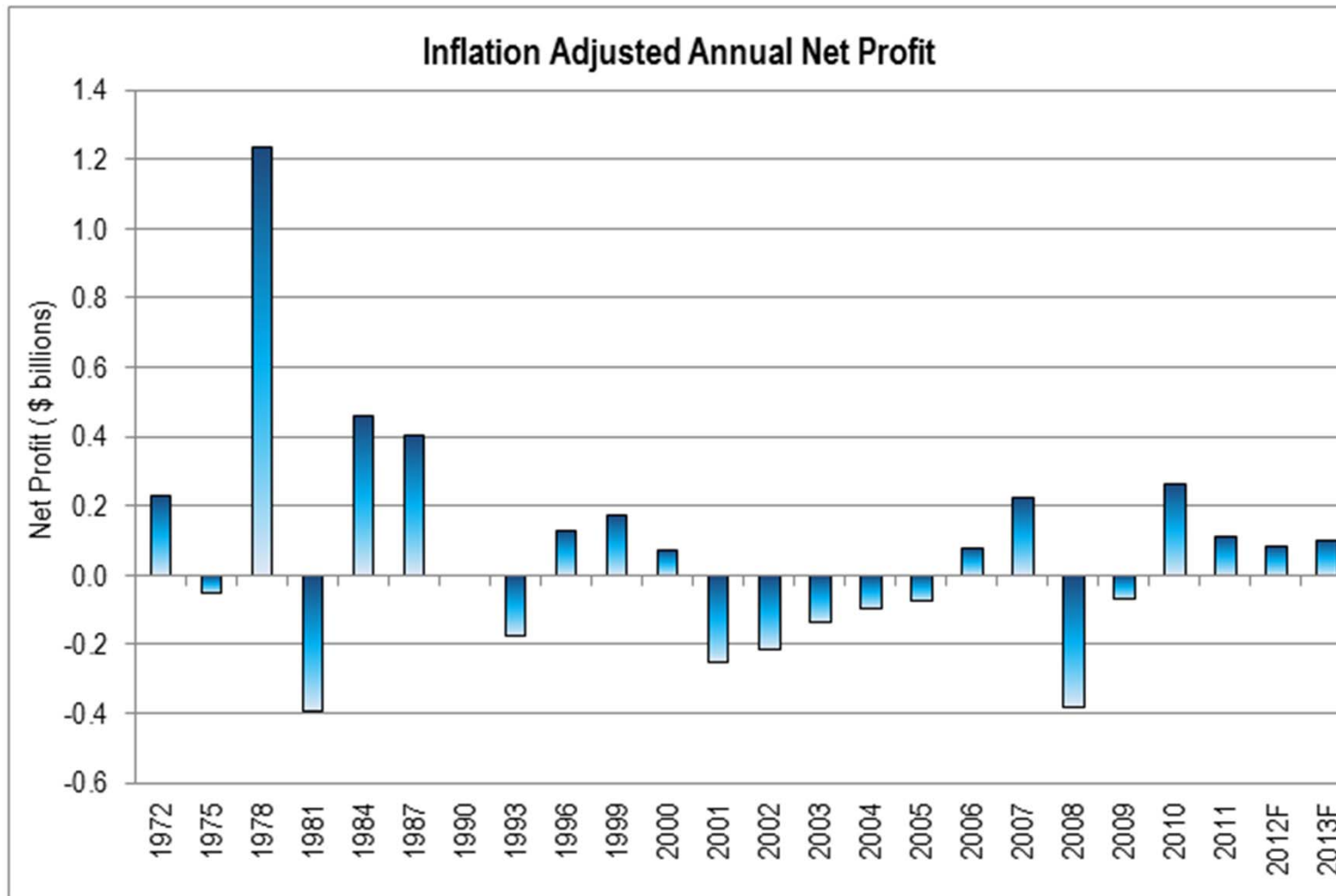
Source: ATAG, 2010 data

- 48 million tons of freight
- \$5.3 trillion goods value
- 172 billion freight ton kilometers
- High value items are shipped by air (e.g. perishable items)

Air Cargo Value Pyramid



Profitability in the global airline industry



Source: 1972-1996: ICAO, *Civil Aviation Statistics of the World*; 1999, IATA, *World Air Transport Statistics*; 2000-2013: IATA, *Industry Financial Forecast, December 2007 and 2012*.

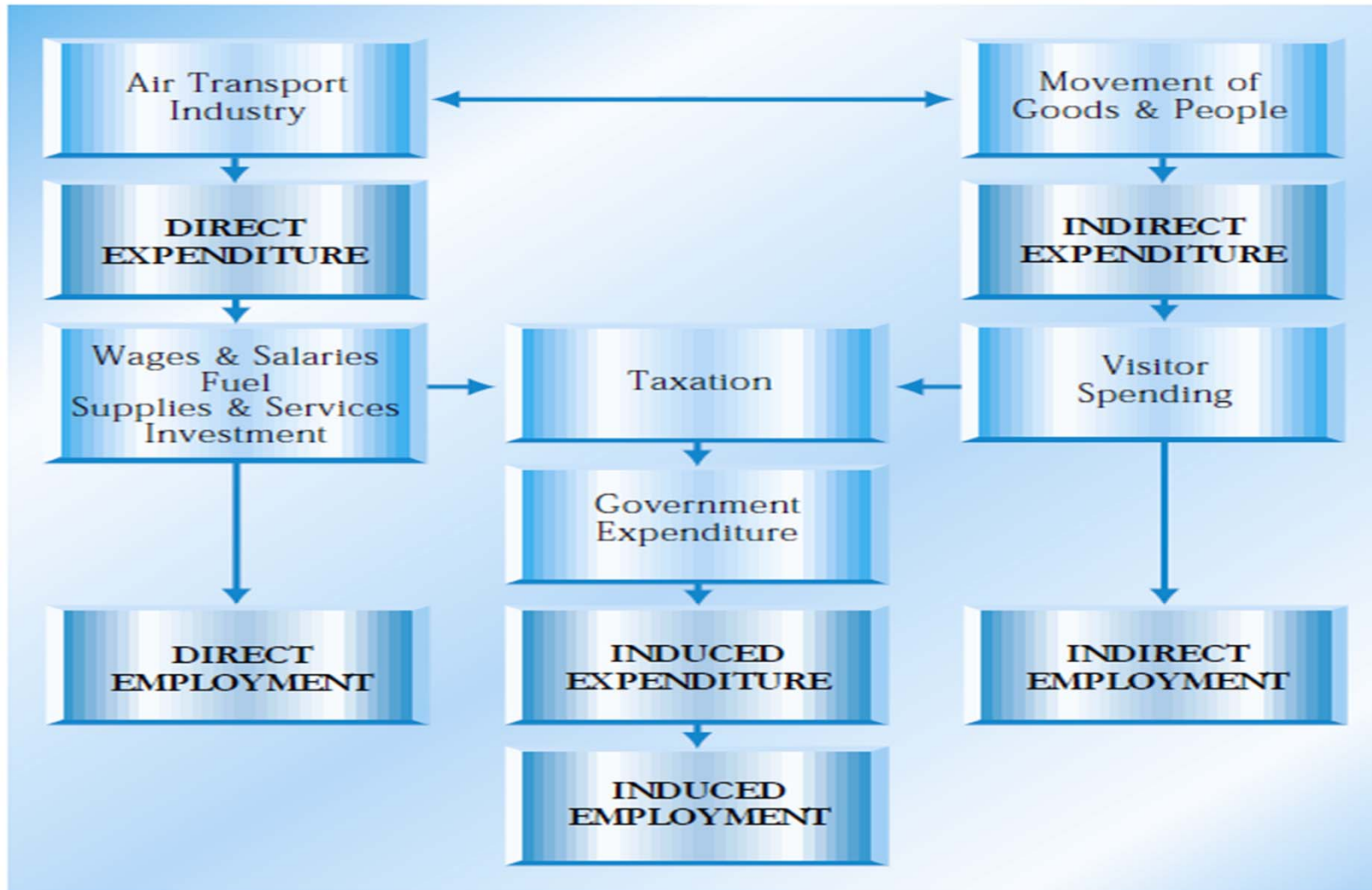
The social return from aviation



Importance of Air Transport

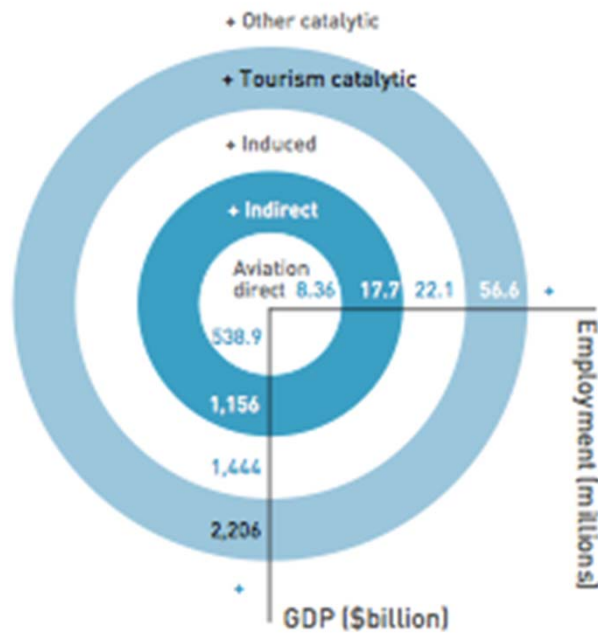
- **Trade and tourism**
- **Social and cultural exchange**
- **Economic growth (hotels, automobiles, tourist destinations, other industries)**
- **Business-to-business transactions**
- **Government interactions**
- **Global interdependent world**

Economic Impact of Air Transport



Economic Impact: Jobs

Aviation's global employment and GDP impact²



56.6 million
Jobs supported by aviation worldwide¹

Source: Air Transport Action Group (ATAG), 2010 data

Economic Impact: Jobs

Canada:

- 2011: 219,000 (401,000 direct, indirect, induced, catalytic)
- 1993: 48,000
- 1984: 42,282

U.S.:

- 2011: 2.8 million (9.3 million direct, indirect, induced, catalytic)
- 1990: 515,000
- 1984: 398,406

Worldwide:

- 2011: 8.4 million (56.6 million direct, indirect, catalytic)

Economic Impact: GDP



Source: ATAG, 2010 data

Economic Impact: Summary

- **The air transport industry itself creates value in the economy.**
 - The industry drives direct, indirect and induced impacts.
- **Air transport becomes the vehicle for promoting economic growth in other sectors.**
 - ‘Catalytic Impacts’



Thank You!

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