Aviation Economics & Finance

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OUTLINE

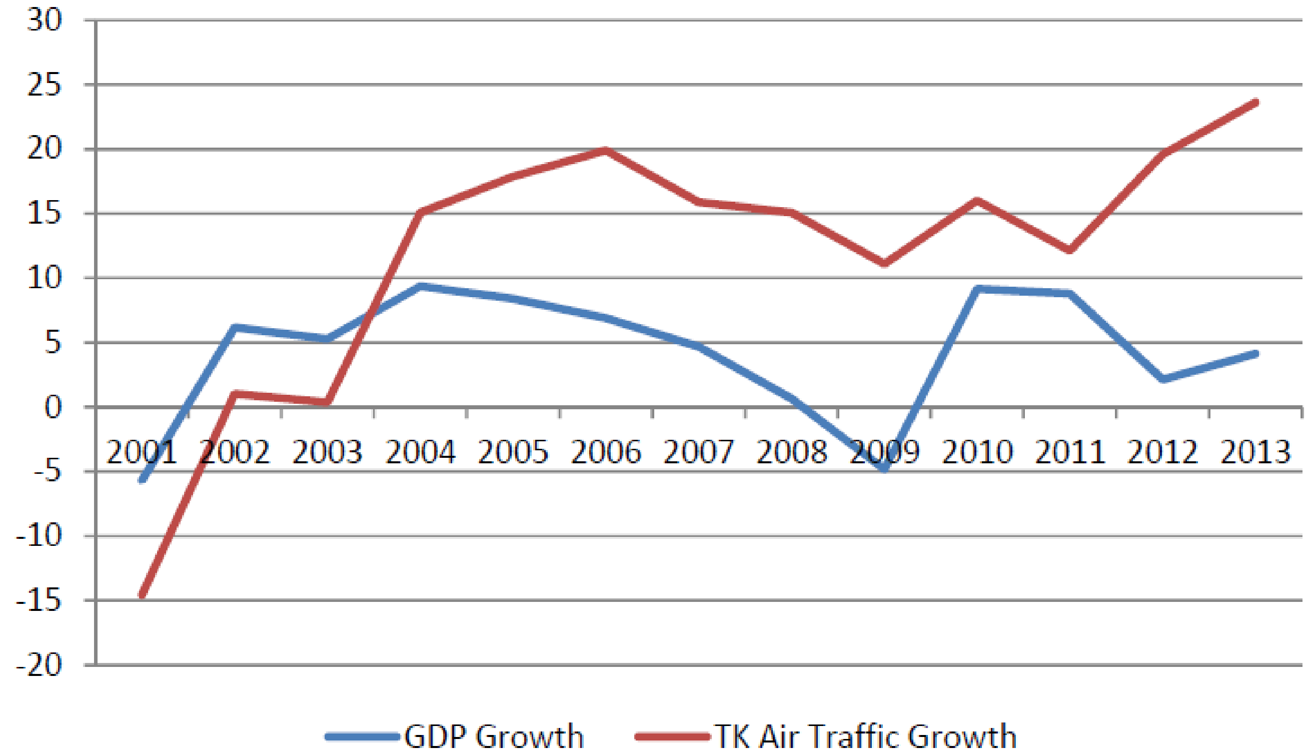
- **Introduction**
- **Mergers and Acquisitions (M&A)**
- **Process and Issues**
- **Economics of M&A**
- **Introduction to competition policy and regulation**
  - rationale for competition policy
  - origins and historical development
  - regimes: EU, UK, USA and TR
  - utility privatisation and regulation
- **Examples**

A. INTRODUCTION

TURKISH AIRLINE STRATEGY

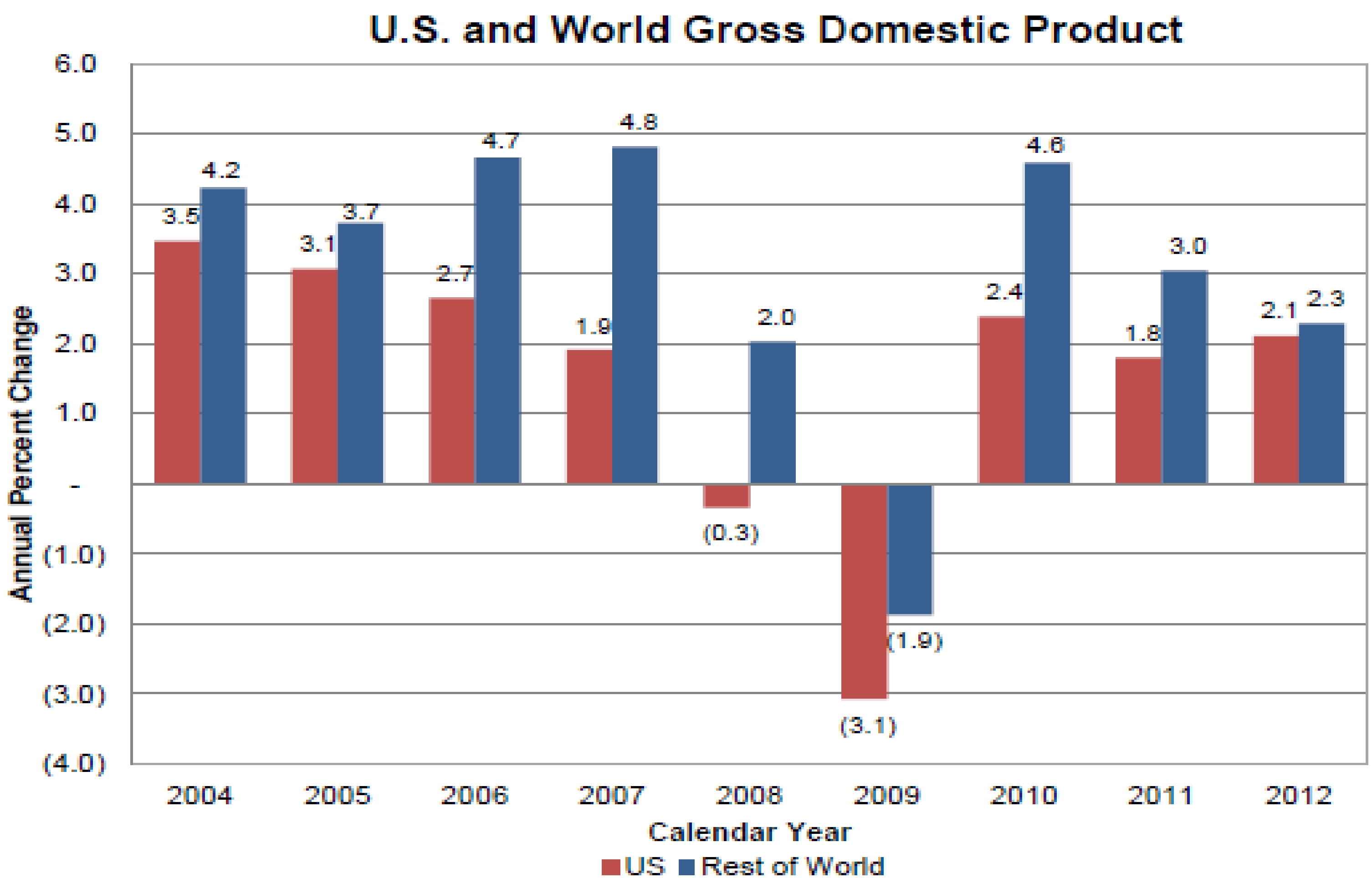
- **The airline industry is cyclical and its performance is closely linked to the gross domestic product (GDP).**

Figure 1: GDP Growth and TK Air Traffic Growth



Source : TUIK and Turkish Airlines Annual Reports

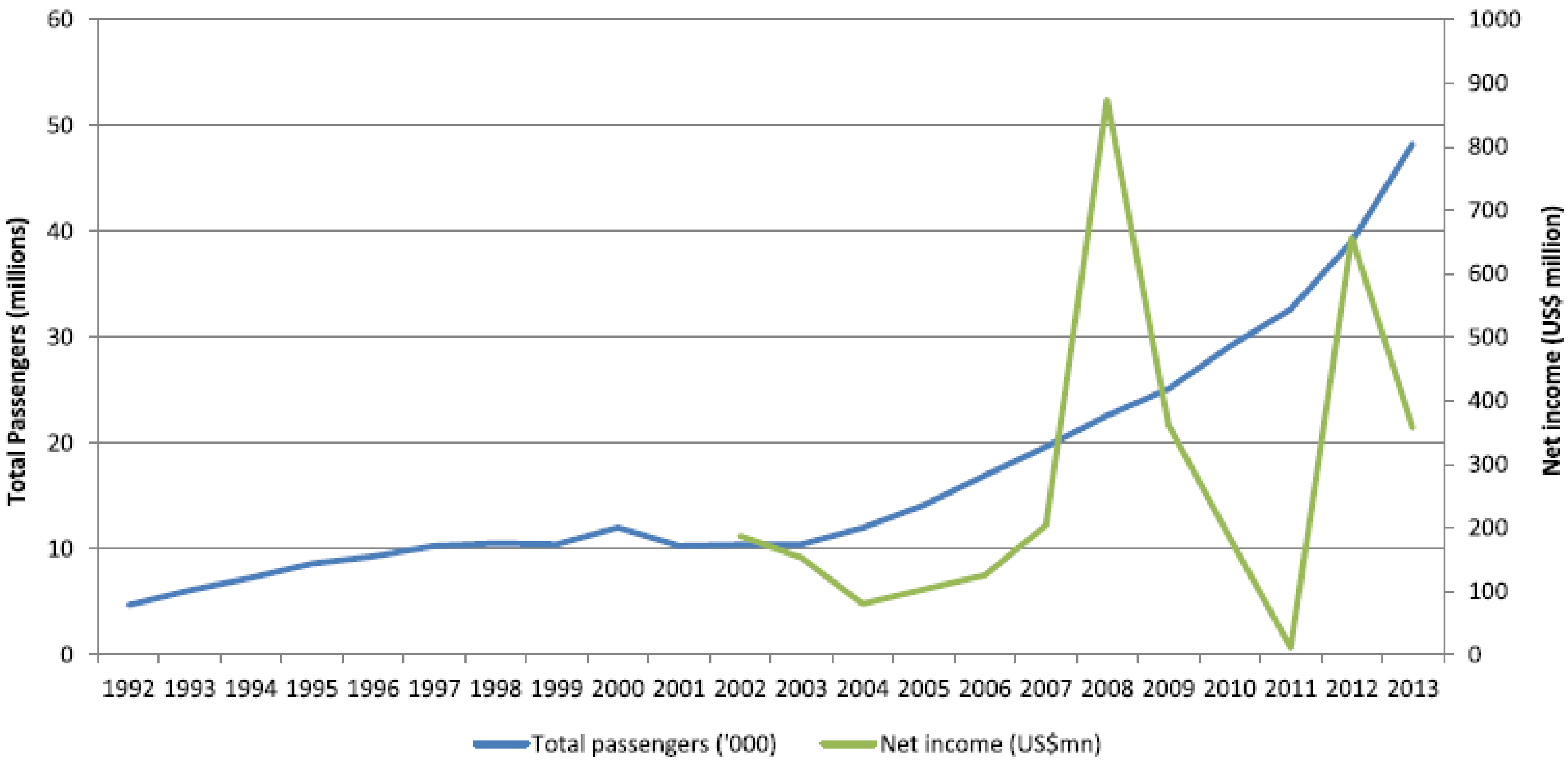
US and World's GDP 2004-2012



Source: IHS Global Insight, GDP Components Tables (Interim Forecast, Monthly), Release date 23

TURKISH AIRLINES STRATEGY

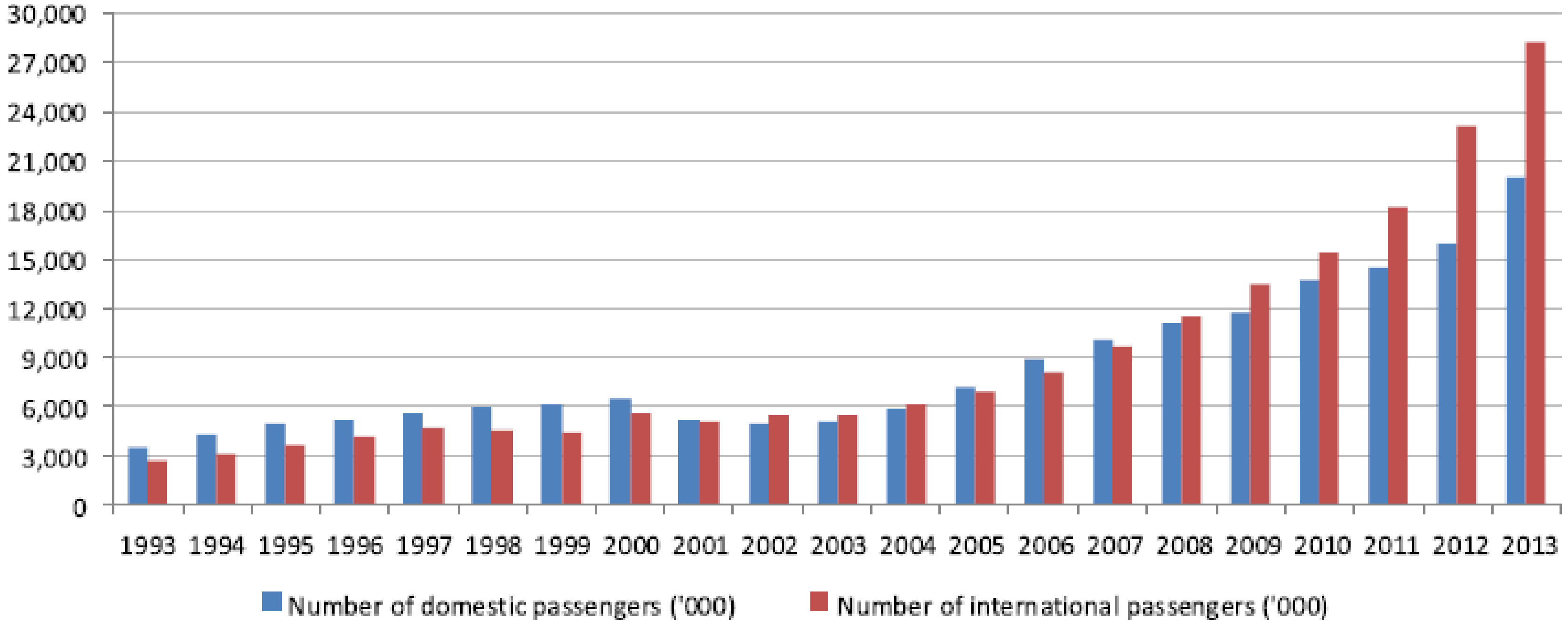
Figure 2: Turkish Airlines Total Passengers and Net Income



TURKISH AIRLINES STRATEGY

- **Competitive Cost Structure**

Figure 3: Network Development of Turkish Airlines



TURKISH AIRLINES STRATEGY

- **Geographic Location**

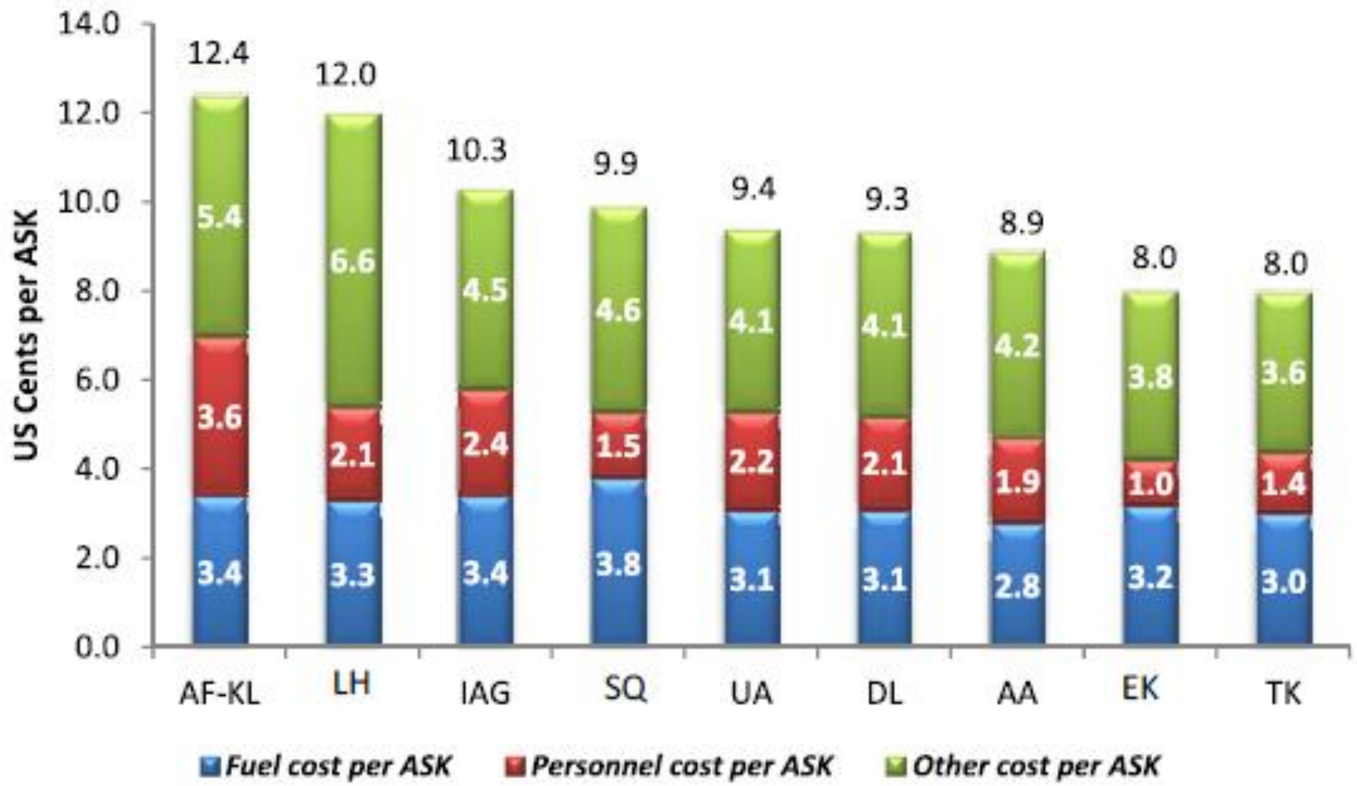
Figure 4: Global Economic Center of Gravity (from 1971 to 2031)

Source: Turkish Airlin

TURKISH AIRLINES STRATEGY

- **Competitive Cost Structure of Turkish Airlines**

Figure 5: The unit costs of selected airlines (2013 Airlines' Annual Reports)



Airline Cooperation and Consolidation

- Aviation is a fast changing world
  - Ethiad has teamed with Air France/KLM.
  - Qatar Airways is now firmly part of Oneworld
  - Rumors: Emirates and Lufthansa are talking
- Turkish has chosen to not use mergers as a strategy, and only uses weak alliances
  - TK could change strategy
  - Future success is highly dependent on negotiationg new bilateral rights to further expand its hub network

MANY FORMS OF COOPERATION POSSIBLE

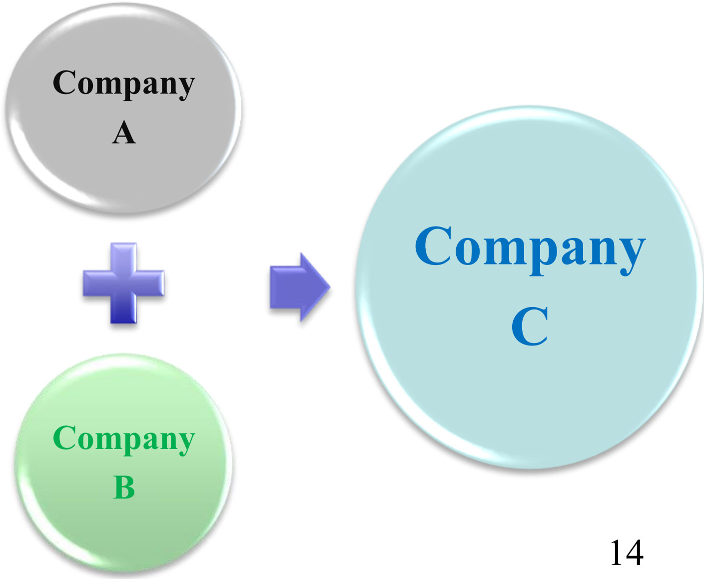
- Code-sharing agreements between two airlines
- Membership in global airline alliances
- Joint ventures to share both revenues and costs
- Mergers and acquisitions

B. **MERGERS AND ACQUISITIONS**

Mergers and Acquisitions

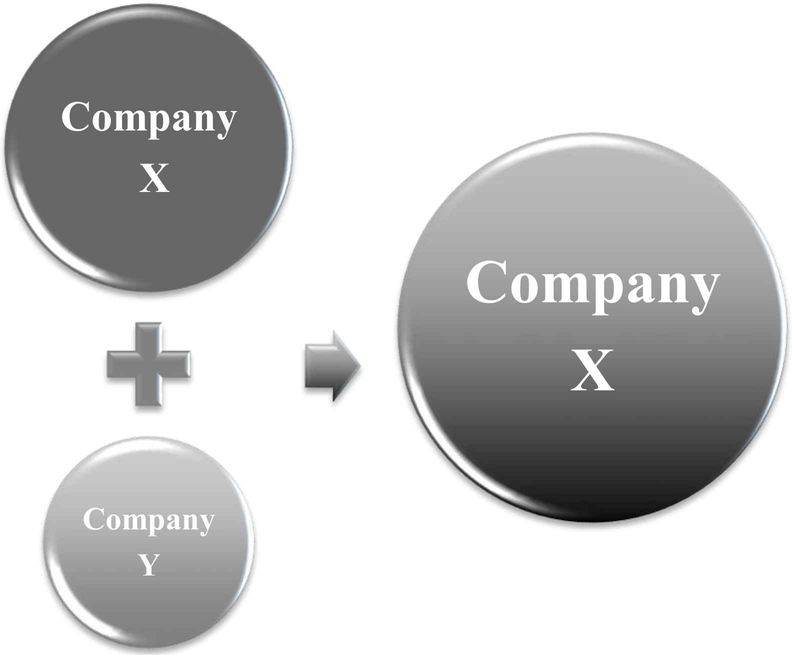
- **Merger:**
  - is where two companies come together to combine and share resources to achieve a common objectives

- **Under merger the combining firms remain**
  - Joint owners
  - New company is created



MERGERS AND ACQUISITIONS

- **Takeover or Acquisition:**
  - one firm purchase the assets of another, with the acquired firm ceasing to be the owners of the firm. Often it is the larger company which acquires a smaller one.



TYPES OF M&A

- **Horizontal**
  - Two companies engaged in similar activities are combined.
- **Vertical**
  - Firms from different point in the same production process to combine
- **Conglomerate**
  - Occurs when two businesses in unrelated industries decide to combine

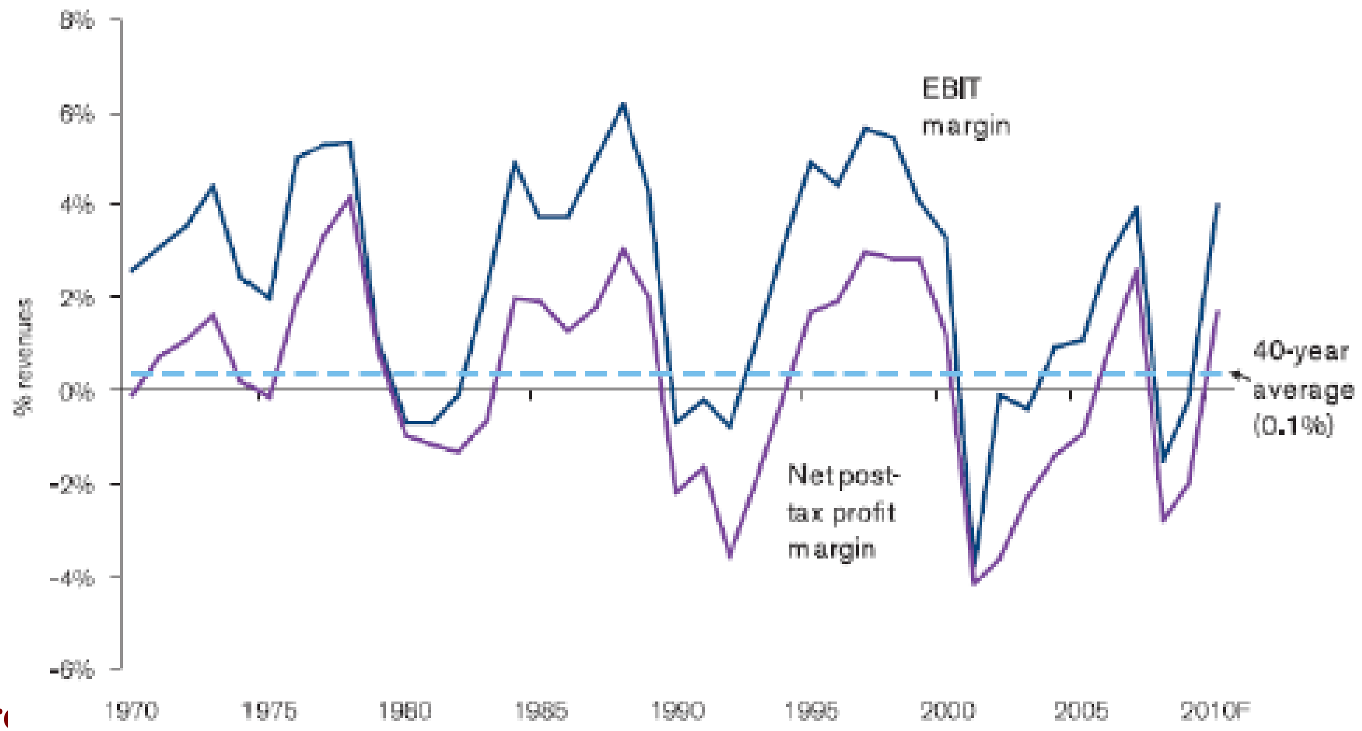
GAINS FROM M&A

- **Increase market power**
  - To have access to another network
  - Value creation by exploiting collusive synergies
- **Operational gains**
  - Reducing operational cost by synergy effects
- **Economies of Scale**
  - To enable benefits of scale to be achieved
  - Better contracts with suppliers

FACTORS AFFECTING M&A ACTIVITY OF AIRLINES

- Airline industry is a challenging industry with low profit margins and high volatility of returns

Figure 6: EBIT margin and Net post-tax profit margin



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Factors Affecting M&A Activity of Airlines

- **What was happening on TK side?**

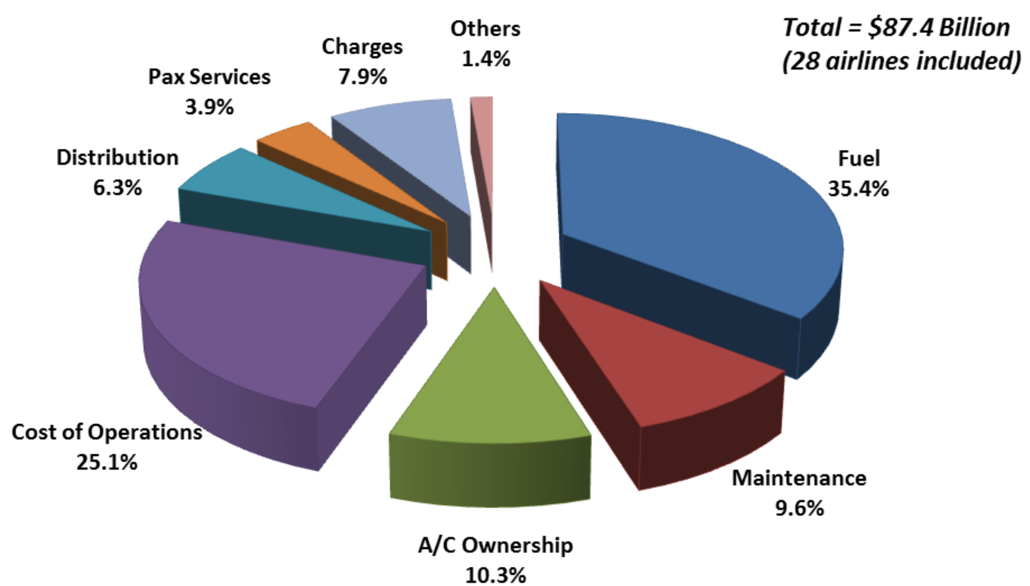
Table 2: TK Airlines summary profit and loss account (USD million): 2009-2013, 1H2013-1H2014

Income Statement (million USD)	2009	2010	2011	2012	2013	1Q2013	1Q2014	13/12 Change
Operating Revenue	4552	5488	7070	8234	9826	2015	2315	19%
Operating Expenses (-)	4058	5149	6855	7616	9249	2062	2418	21%
Operating Profit	494	299	215	618	577	-48	-102	-6.6%
Net Profit	362	185	11	657	357	-14	-102	-45.6%
Net profit % of Revenue	7.9%	3.4%	0.15%	7.9%	3.6%			

FACTORS AFFECTING M&A ACTIVITY OF AIRLINES

- **Operating costs keep surging**
  - The industry is facing higher operating costs, in particular due to increases in fuel costs which currently account for 25-40% of airline operating osts

Figure 7: Main Cost Divers (2012 Operational Cost Structure)

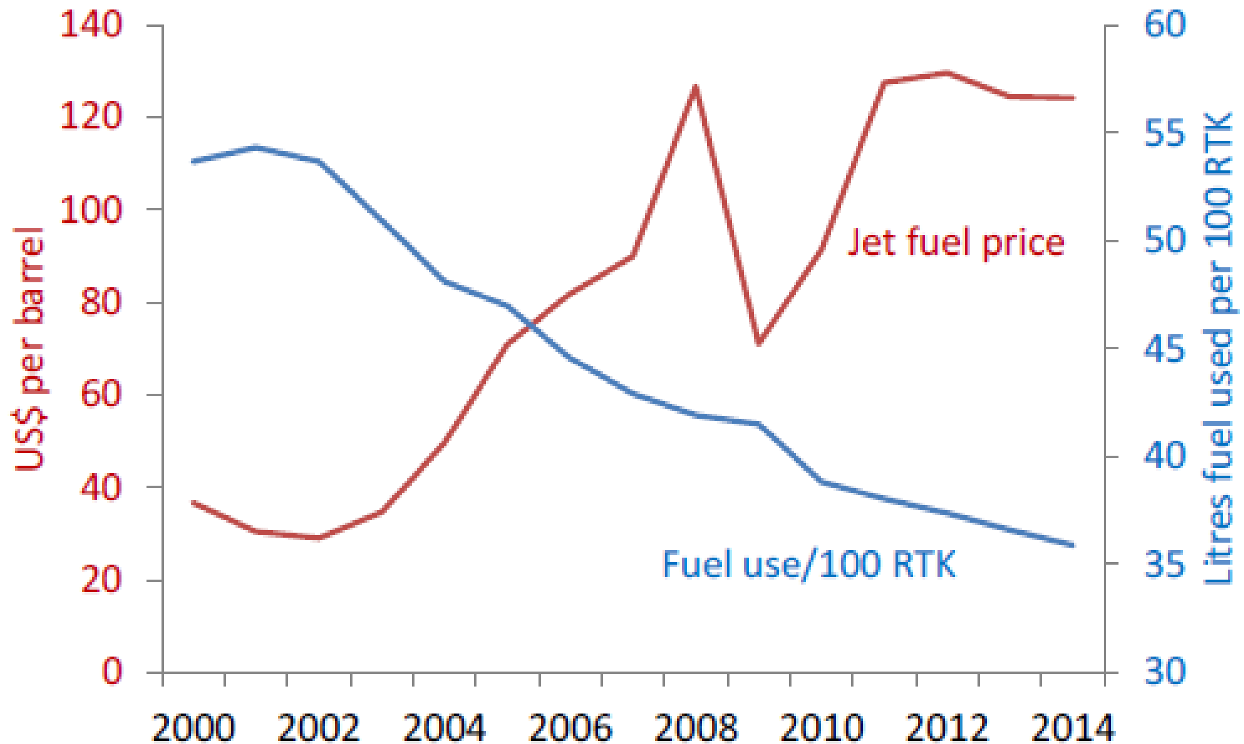


Source: IATA

FACTORS AFFECTING M&A ACTIVITY OF AIRLINES

- **Saving fuel costs**

Figure 8: Fuel efficiency and the price of jet fuel



Source: IATA, IEA, Platts

FACTORS AFFECTING M&A ACTIVITY OF AIRLINES

- **Bankruptcies**
  - Cost advantage due to economics of scale and scope
  - Higher demand due to better connectivity, greater range of destinations and increased service frequenct
- **High incidence of bankruptcies in the airline industry following deregulation**
  - Continuing trend among major carriers to restructure under bankruptcy protection in the US

MERGERS AND ACQUISITIONS (M&A)

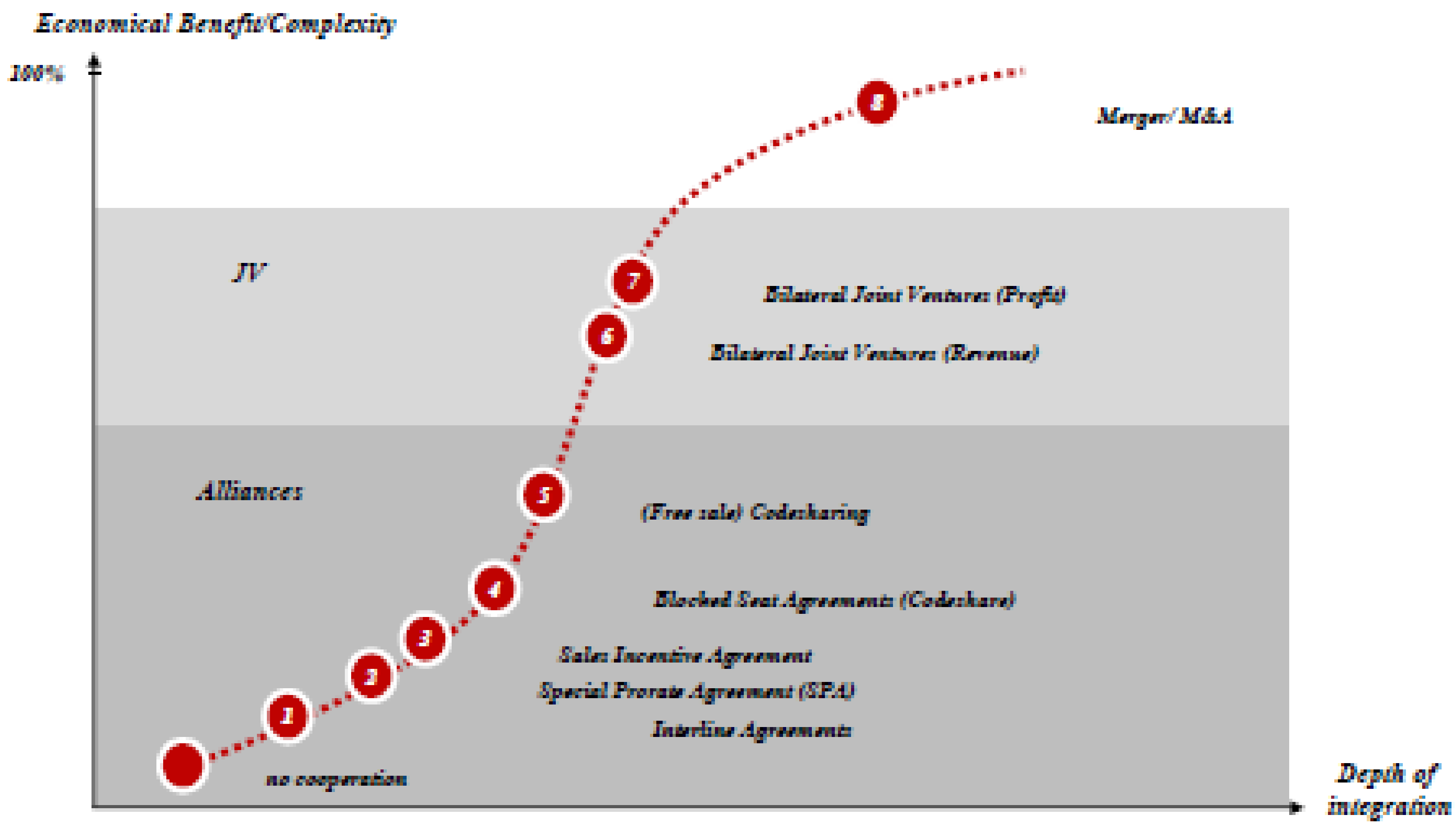
- **Mergers and acquisitions (M&A) are complex, involving many parties.**
- **Mergers and acquisitions involve many issues, including**
  - Corporate governance.
  - Form of payment.
  - Legal issues.
  - Contractual issues.
  - Regulatory approval.
- **M&A analysis requires the application of valuation tools to evaluate the M&A decision.**

Country	Limits on foreign ownership
Australia-New Zealand	49% for airlines engaged in international operations, 100% for solely domestic
Canada, Mexico	25%
China	35%
Chile	100% as long as airline's principle place of business is in Chile
EU	49%, applies to non-EU citizens
India	49%, but foreign airlines cannot hold shares in Indian airlines
Japan, Taiwan	33.33%
Korea	49%
Malaysia	45%
Singapore	27.51%
Thailand	30%
United States	25%, one-third of the board of directors, chairman/woman, CEO/president must be US national
Turkey	Majority of the shares must be hold by Turkish national

WHAT IS ALLIANCES

- **An alliance is an agreement (both vertical and horizontal) between two or more airlines that enter into a form of cooperation and may be passenger and/or cargo**
  - Global alliances (Star, SkyTeam and Oneworld)
  - Bilateral and multilateral alliances (marketing alliances, joint ventures, code share, etc.)
- **Alliances are subject to regulatory approval depending on its integration level**
  - US regulators may grant anti-trust immunity to international alliances
  - EU regulators may grant anti-trust immunity to international alliances
  - Both the US and EU will consider whether or not there is a signed Open Skies Agreement with the foreign carrier's government

AIRLINE COOPERATION



Metal-neutral Joint Ventures

- **Metal-neutral joint ventures**
  - High degree of integration
  - The most intensive form of an airline alliance
  - Revenue & profit sharing
  - Joint setting of prices and schedules
  - Similar to a merger but no ownership transfer
- **Metal-neutral joint ventures in major aviation markets**
  - Transatlantic
    - Star A++ (Lufthansa Group, Air Canada, United/Continental)
    - SkyTeam Joint Venture (Air France / KLM, Delta and Alitalia)
    - Oneworld Joint Venture (American, British Airways / Iberia)
  - Transpacific
    - Star Joint Venture (United / Continental, ANA)
    - Delta/Virgin Australia Joint Venture
    - American / JAL Joint Venture

WHY ALLIANCES?

- **Foreign ownership rules**
  - Many countries prohibit or limit ownership of domestic airlines. International or cross-border mergers are rare. Instead, the benefits of a merger can be achieved through an alliance.
- **Restrictions on cabotage rights**
  - Countries generally restrict foreign airlines from operating domestic service. There are exceptions (e.g. the European Union, Australia allowing some cabotage as extension of long haul routes).
- **Access to a larger global network**
  - Airlines can increase service frequency and number of destinations served by participating in an alliance. Increased connectivity may improve load factors.

WHY ALLIANCES?

- **Marketing cooperation**
  - Frequent Flyer Programs
  - Codeshare Agreements
  - Lounge Access
  - etc.
- **Cost synergies**
  - Shared airport facilities
  - Joint scheduling
  - Reciprocal sales arrangements
  - Increased buyer power
- **Decrease in competition**
  - Airline alliances have a potential to diminish or exclude competition.
  - Pro- and anti-competitive effects will be discussed in Module 10.

Trends in airline alliances

- **Many major airlines have joined a major alliance grouping (Star, SkyTeam or Oneworld)**
  - Over 50 carriers are members of one of the three major alliances
  - These carriers represent two-thirds of industry's ASKs
  - LCCs begin to join global alliances. In 2012, Airberlin joined oneworld
- **There is a tendency towards seeking deeper cooperation by airlines via bilateral and multilateral alliances**
  - "metal neutral" joint ventures are a form of a super-alliance which is very similar to a merger.
- **Several major carrier that have deliberately avoided alliances seek increased cooperation on a bilateral basis (e.g. Emirates, Etihad)**

C. **PROCESS AND ISSUES**

Etihad's Strategic Partnerships

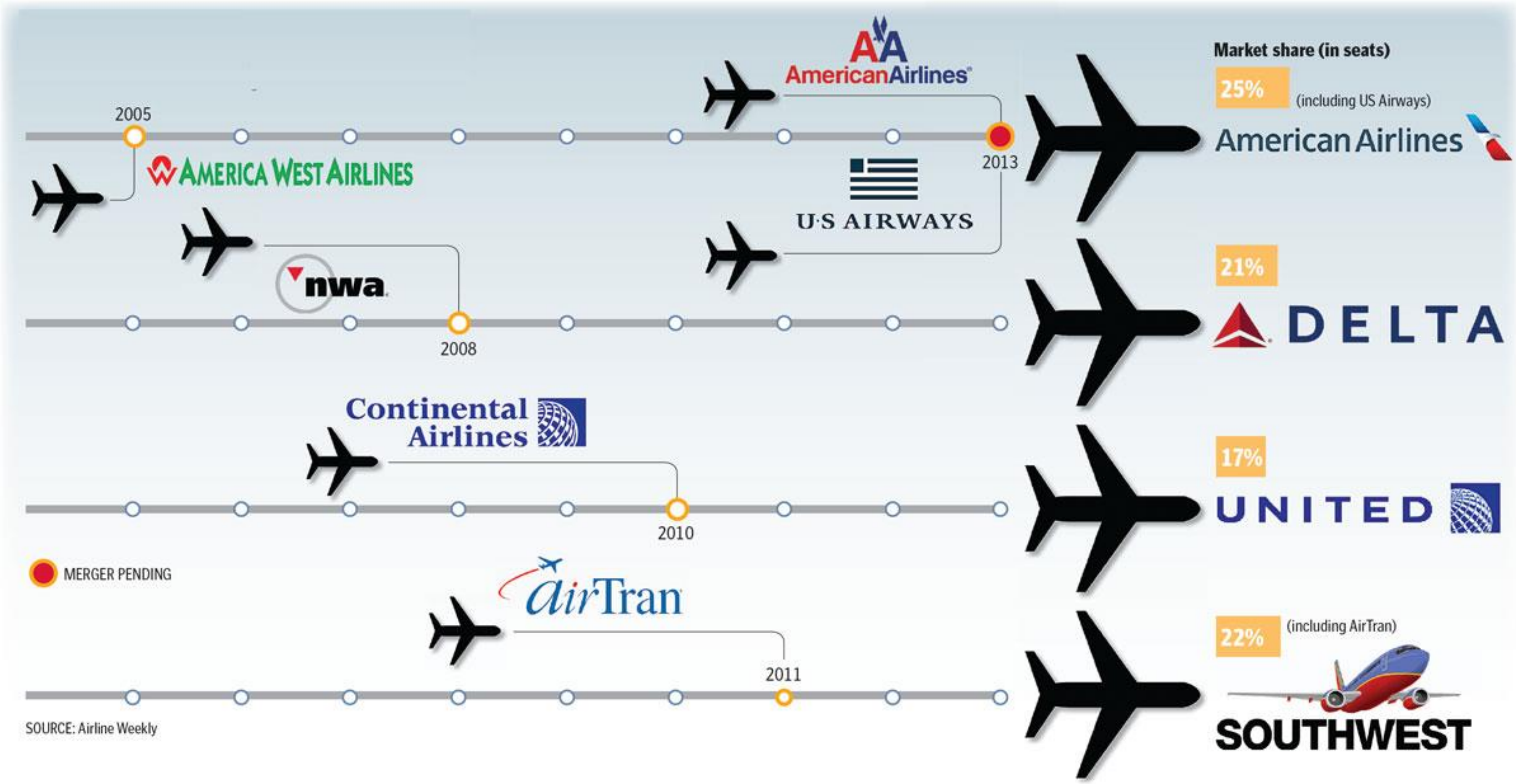
AIR TRAFFIC PARADIGM SHIFTS

The emergence of Gulf/Middle East carriers has caused a paradigm shift in global traffic flows across major connecting hubs are depicted above.

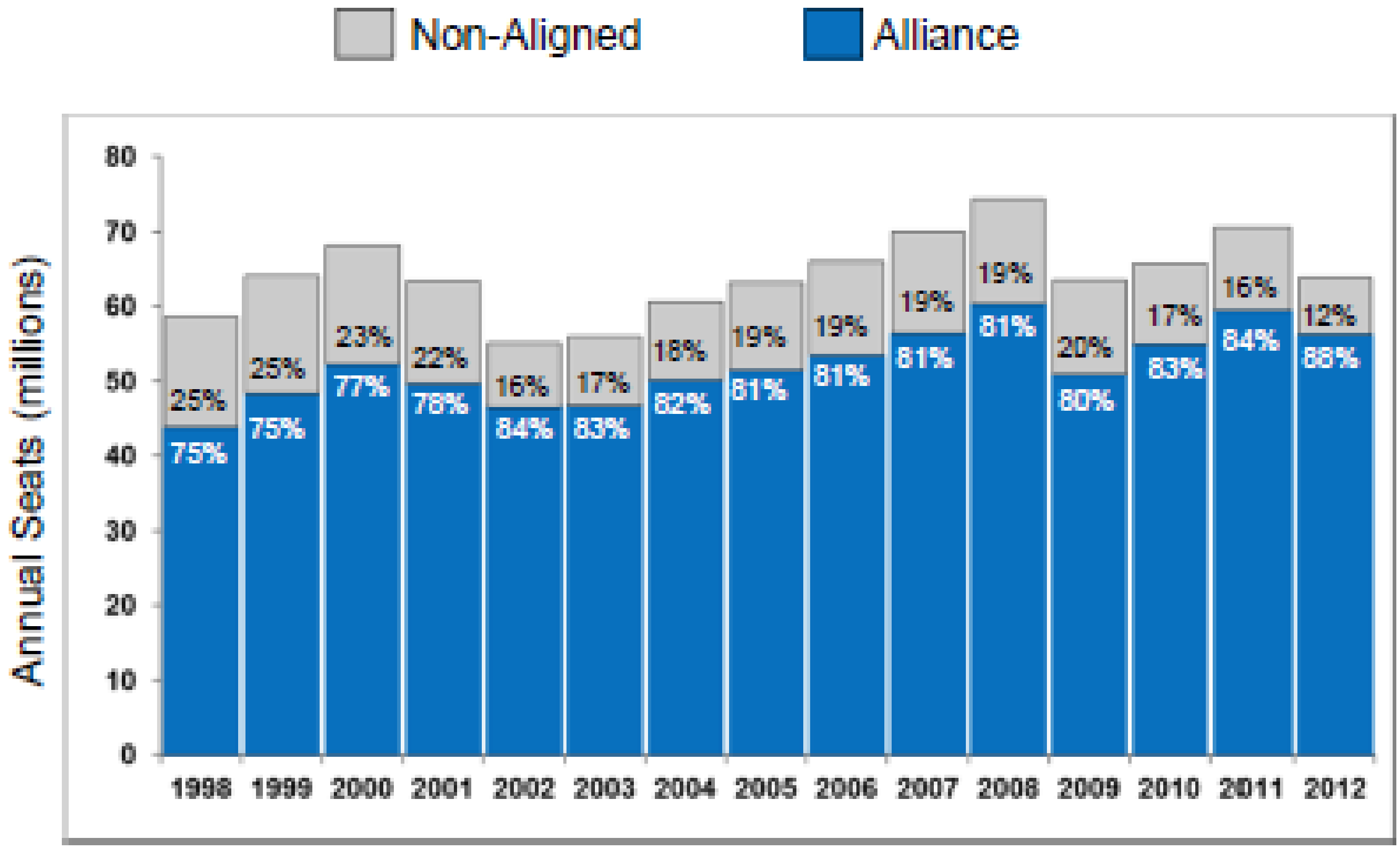
QANTAS AND EMIRATES PARTNERSHIP

- **Before**
  - Qantas had 5 one-stop destinations in Europe (via QF operations or codeshares)
  - No service to Middle East/North Africa
- **After**
  - 32 once-stop destinations in Europe and 31 one-stop destinations in Middle East/North Africa via DXB
  - Revised service to SIN/HKG/KUL for better connectivity to Asia

Recent M&A and Joint Ventures in the US



North Atlantic Alliance and Non-Aligned Market Shares



Source: U.S. DOT T-100

North Atlantic Alliance Structure

July 2013 Market Shares (Frequency)*

	Joint Venture	Other Alliance	Non-Aligned
U.S. – Europe	78.5%	14.3%	7.2%
U.S. – U.K.	94.5%	3.5%	2.0%
U.S. – London LHR	96.4%	3.1%	0.4%
U.S. – Paris CDG	90.3%	4.2%	5.5%
U.S. – Amsterdam	94.4%	3.0%	2.6%
U.S. – Frankfurt	81.8%	12.1%	6.1%

Note: Virgin Atlantic Included In Sky JV
* Based on monthly flights
Source: Diio MI July 2013 Schedule Data

What makes an alliance successful?

- **Factors that affect success of an alliance:**
  - Aligned expectations
  - Win-win financial provisions
  - Cultural compatibility (corporate and national)
  - Consistent quality and other customer relations
  - Network fit
  - Well-coordinated IT systems
    - E.g. WestJet-Southwest failure
  - Smooth airport interfaces
  - Coordinated selling and distribution

DISCUSSION: LUFTHANSA AND TURKISH AIRLINES RELATION

- **In 2006, LF sponsored TK's application to join Star Alliance**
- **Since 2010, TK and LF had been seeking closer co-operation**
- **In 2013, LF decided to end its codeshare agreement with TK**
- **Reasons:**
  - Strong growth of TK in Germany in particular secondary German cities (TK has more than three times LF's weekly frequencies between Germany and Turkey)
  - LF cannot match the fares with TK

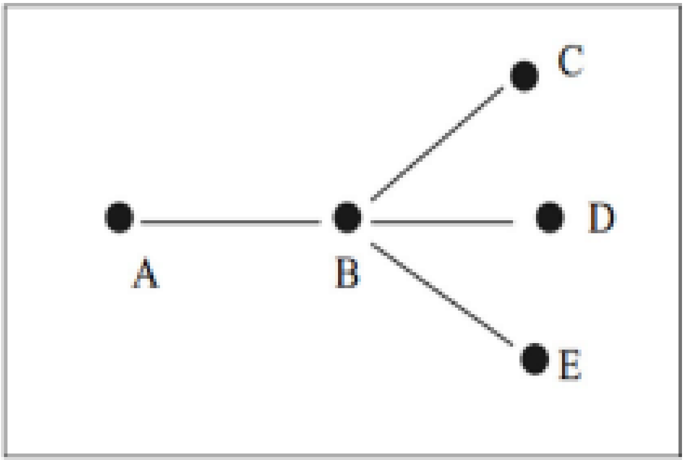
D. **ECONOMICS OF M&A**

ECONOMICS OF M&A

- **Key airline industry trends:**
  - Increased penetration of mergers and alliances
  - Industry consolidation
  - “Hub and spoke” route systems post-deregulation
- **On the one hand, increased industry consolidation and hub-and-spoke systems allow airlines to benefit from cost economies and passengers from better connections, higher frequency of service and a wider range of destinations.**
- **On the other hand, these trends can lead to enhanced ability by carriers to exercise market power, exclude competition and cause consumer harm.**

COMPETITIVE LANDSCAPE

- **Characteristics of the airline industry that favour anti-competitive practices**
  - Hub concentration
  - Airports slot constraints
  - Price Transparency
  - Multi-market contact



Competitive Lanscape

- **Competition from other modes of transport is limited or ineffective**
  - High speed trains may be a substitute on some route
  - Other ground transport is generally not an effective substitute
  - For most routes, airlines have no substitutes
- **Business travellers account for a disproportionate share of airline profits**
  - The 20/80 rule
  - Time-sensitive travellers are typically the focus of antitrust concerns

RATIONALE FOR COMPETITION POLICY

- **Economic efficiency**
  - allocative
  - productive
  - “perfect competition” condition of first fundamental theorem of welfare economics

- **Wider economic benefits**
  - competitiveness and growth
  - reform of UK competition policy in late 1990s/early 2000s based on idea that competition is good for productivity and growth

- **Political interests**
  - protection of consumers
  - competition as a substitute for state intervention?

E. INTRODUCTION TO COMPETITION POLICY AND REGULATION

Competition Policy Regimes

- **European Union**
  - agreements between firms: Article 101 (formerly 81) TFEU
  - single-firm conduct: Article 102 (formerly 82) TFEU
  - merger control: EC Merger Regulation (1989, amended 2004)
- **United Kingdom**
  - agreements between firms: Chapter I of Competition Act 1998; Enterprise Act 2002 (stronger measures against cartels)
  - single-firm conduct: Chapter II of Competition Act 1998
  - merger control: Enterprise Act 2002
- **United States**
  - monopolisation (agreements & single-firm conduct): Sherman Act 1890
  - merger control: Clayton Act 1914
- **Turkey**
  - Article 4054 (Turkish Competition Authority)

US ANTITRUST LAWS

- **Sherman Act 1890**
  - Section 1: prohibits contracts, combinations & conspiracies in restraint of trade
  - Section 2: prohibits monopolisation, attempts to monopolise & conspiracies to monopolise trade
- **Clayton Act 1914**
  - prohibits price discrimination & some vertical restraints, where these "substantially lessen competition" (SLC)
  - merger control: SLC test
- **Federal Trade Commission (FTC) Act 1914: set up FTC**

EU & UK: AGREEMENTS BETWEEN FIRMS

- **Art. 101 / Chapter I of Competition Act 1998 prohibits**

  " … all agreements between undertakings … which have as their object or effect the prevention, restriction or distortion of competition"

- **Includes**
  - price fixing
  - limiting production or investment
  - market sharing
  - applying dissimilar conditions or supplementary obligations
- **Exemptions: agreements that are necessary to**
  - improve production or distribution
  - promote technical progress

EU & UK: ABUSE OF DOMINANCE

- **Art. 102 / Chapter II of Competition Act 1998 prohibits**

  "*Any abuse … of a dominant position*"

- **Abuse includes**
  - imposing unfair prices or conditions
  - limiting production or technical development
  - applying dissimilar conditions or supplementary obligations

- **What is "dominance"? Is it the same as monopoly?**
  - "*position of economic strength … which enables it to prevent effective competition*" (United Brands, 1978)
  - "*does not preclude some competition*" (Hoffman-La Roche)

- **What is the "relevant market" within which the firm operates?**
  - econometric evidence on substitution between products

INTERNATIONAL COOPERATION

- **Since 1991 the European Union and the United States have been coordinating regulatory reviews**
  - transatlantic alliances
  - mergers and acquisitions affecting the transatlantic market
  - joint studies on the impact of alliances
- **Different approaches in different jurisdictions may lead to inconsistent decisions or remedies**
  - E.g. Transborder Joint Venture between Air Canada and United/Continental
    - The US Department of Transport granted antitrust immunity (with carveouts on 6 routes in total)
    - Canada's Competition Bureau challenged the JV in court with a subsequent settlement (additional carve-outs on 10 routes in total)

ANTITRUST ANALYSIS OF M&A

- **Competition authorities are likely to start with the view that a merger that may lessen competition is undesirable, especially if:**
  - The merged airline has dominant position
  - There is no effective competition
- **Thus, the merging airlines must show that the benefits of the merger will offset the costs**

Benefits of the merger

- **Cost efficiencies for airlines**
  - Benefits to airlines from reducing costs matter
- **Increased revenues/prices for airlines**
  - Benefit to airlines from higher fares that result from reduced competition is not a benefit from an antitrust law point of view
- **Benefits for passengers**
  - Better service (connectivity, scheduling, FFp integration, lounge access, etc.)
  - Better price that may result from cost savings

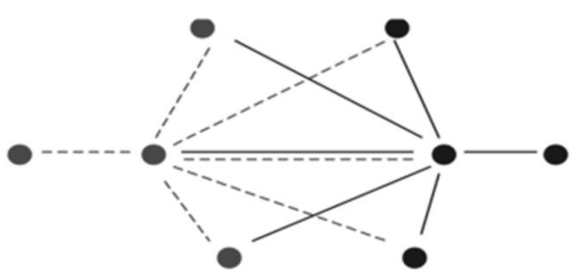
Benefits vs Cost of an airline merger

- **Competition authorities will compare potential benefits to the costs of an airline merger**
  - Fare
    - Complementary vs parallel (overlapping) networks
    - City-pair vs inter hub passengers
  - Reduced capacity
    - A cost if fewer passengers are served
    - A cost if less choices for passengers
    - A benefit if capacity reduction leads to costs savings

Complementary vs Parallel Networks

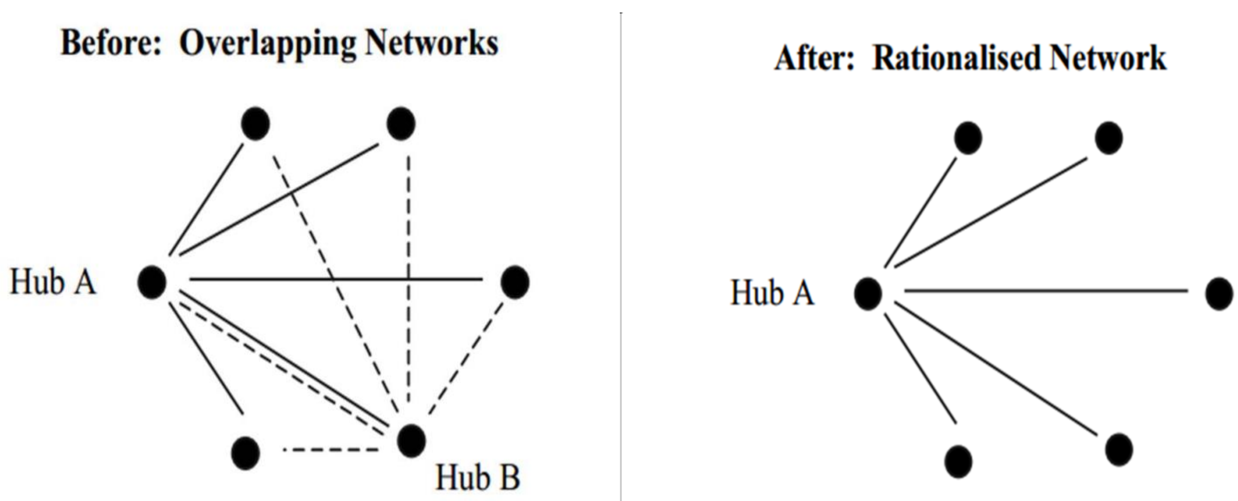
- **The anti-competitive effect of a merger/alliance between two airlines is**
  - smaller if th … ap

  - greater if the networks have substantial overlap



NETWORK RATIONALIZATION

- **The impact of mergers and alliances**
  - Rationalization of networks and removal of competing hubs
    - Increased traffic density and reduced flight frequency
  - Potential reduction in competition in markets previously served by the merger partners



ANTITRUST ANALYSIS

- **The presence of remaining competition in the market**
  - A major focus
- **Based on the idea that effective outstanding competition disciplines exercise of market power**
  - Prevents the cost of higher fares
  - Prevents the cost of reduced passenger choices
  - Allows for the benefit of the merger
- **Competition from carriers operating indirect service will be considered**
  - Generally not a good substitute for non-stop service

MERGER GUIDELINES

- **Clarify when government agencies are likely to act to impede merger**
- **Articulate a 5-step procedure**
  1. Market Definition
  2. Is there a substantial share of the market?
  3. Is the exercise of market power probable?
  4. What are the efficiencies?
  5. Are the costs of exercising market power greater than the generated efficiencies?

1. Market Definition

- **Product market**
  - Business travellers/Leisure travellers
  - Economy/Business/First Class
  - Connecting/Non-stop passengers
    - Different time and price sensitivity
    - Different preferences for low cost and full service airlines
      - Virgin estimated that time sensitive passenger on london-NY value time at $240 per hour

1. Market Definition

- **Airline Relevant Geographic Market**
  - Airport pairs
  - City pairs
    - Airline markets are usually defined as city pairs
  - Entire networks
  - Hub airport

2. Basic Market Concentration Index

- The Herfindahl-Hirschman Index (HHI)

$$HHI = \sum_{i}^{N} s_i{}^{2}$$

where s_i is the market share of firm i, and N is the number of the firms in the market. The HHI ranges between 0 to 10000. (multiplied by 100^2)

HHI Concentration Level and Possible Government Action

Post-Merger HHI	Concentration	Change in HHI	Government Action
Less than 1,000	Not concentrated	Any amount	No action
Between 1,000 and 2000	Moderately concentrated	250 or more	Possible challenge
More than 1,800	Highly concentrated	150 or more	Challenge

EXAMPLE 1: HHI

- Consider an O-D where six carriers are operating. Their respective market shares are as follows

Company	Market Share
A	25%
B	15%
C	15%
D	15%
E	15%
F	15%

- What is the likely government action, if any, if companies E and F merged?

Company	Market Share	HHI Before		Company	Market Share	HHI After
A	25%	625		A	25%	625
B	15%	225		B	15%	225
C	15%	225		C	15%	225
D	15%	225		D	15%	225
E	15%	225		E+F	30%	900
F	15%	225				
Total	100%	**1125**		Total	100%	**1575**

- **The O-D market would be considered moderately concentrated before and after the combination of E and F.**
- **The change in the HHI is 450, which may result in a gov't challenge**

EXAMPLE 2: HHI

- **From Tuscon to New York**

Airlines	Route	Tickets Sold	Market Share
AA	TUS-Newark	400	0.67
UA	TUS-Newark	200	0.33

$$\boldsymbol{HHI = \left(\left(\frac{2}{3}\right)^2 + \left(\frac{1}{3}\right)^2\right) * 10000 = 5555.6}$$

Likely to challenge because highly concentrated operated only by two unequal size firms.

3. Assessing Market Power

- Market power is defined as:
  - I the ability to protably sustain prices above competitive levels

  OR
  - the ability to restrict output or quality below competitive levels.
- A firm with the market power may harm the competition by
  - weakening existing competition
  - raising entry barriers
  - slowing innovation
- Market power can be possessed by a single firm or group of firms

MARKET SHARE

- **High market share may be an indication of market power**
  – Determined in reference to the relevant market
  – Measured in traffic, revenue, frequency, etc.
  – Safe harbours
    - A market share below 35% will not raise concerns
    - A market share above 60% will likely raise concerns

HIGH MARKET SHARE BUT NO MARKET POWER

- **But high market share does not automatically equal market power**
  - Barriers to entry need to be analyzed
  - Contestable market theory

ENTRY BARRIERS

- **Airport slot constraints**
  - Large airports operate nearly at capaciy
    - E.g. Heathrow is currently at 99% capacity
    - Other major airports in NY, London, Tokyo etc. are also slot constrained
  - Dominant airlines hold slots and limit new entry
- **Access to airport facilities**
  - Terminals, gates, check counters, etc.
- **Computer Reservation Systems**
  - Display Bias
  - Booking Fees
  - Travel agent incentives

Entry Barriers

- **State ownership**
  - Limits sources of finance for new entrants
  - Government “bailouts” or subsidies limit or impede new entry
- **Loyalty programs**
  - Act as a volume discount
  - Principle-agent problem (business travellers)
  - The effect is greater for loyalty programs where points can be accumulated faster or where an airline has a broader network
  - Incumbent airlines may be required to grant competitor access to their frequent flyer programs
- **Discounts to large corporate customers**
  - On the condition that all or nearly all travel is booked with a specific airline

REMEDIES

- **If a merger is undesirable from an antitrust point of view, measures can be adopted to reduce its harmful impact**
  - Reduce entry barriers to other competing airlines
    - slot divestiture at congested airports
  - Carve out selected routes from a joint venture
    - applied primarily where the merging airlines are the only operators
    - approach used by the United States in granting antitrust immunity to international alliances
      - the carriers can get approval without the carve outs but they must present evidence that benefits will offset costs
  - Agreement that the merged carriers will not undercut prices postmerger
    - or engage in other forms of anticompetitive conduct

REMEDIES

- **Structural remedies**
  - Airport slot divestiture
  - Market share restrictions on key routes
    - used by the European Commission
- **Behavioral remedies**
  - Mandated access to essential facilities or services
    - computer reservation systems, terminal gates, loyalty programs, etc.
  - Obligation to interline
    - or enter into other arrangements that facilitate competition
  - Carve outs
    - prohibition to coordinate on certain routes (carve outs)
    - used by the United States / Canada

E. **EXAMPLES**

SELECTED M&A CASES 2005-PRESENT

- **Delta and Northwest Merger**
  - On April 14, 2008 DL and NW announced a $17.6 billion merger, DL was the second and NW was the forth largest US carrier
  - Both operated under hub-and-spoke system
  - September 26, 2008, two airlines' shareholders approved the merger
  - October 29, 2008 DoJ approved their merger
    - Claiming the potential for substantial cost efficiencies with little or no harmful effects in competition.
  - As of 2009, NW's aircrafts have operated under Delta and NW's hubs have been fully consolidated with Delta's brand

SELECTED M&A CASES 2005-PRESENT

- **Lufthansa and Swiss Air (2005)**
  - LX is acquired by LH
  - LH made a move on several smaller European carriers, Swiss Air, Austrian Airlines and BMI (which they sold to British Airways in 2011) in separate deals
  - LH also purchased 19% of U.S. carrier Jetblue in 2007

Selected M&A Cases 2005-Present

• AMR and US Airways Merger

- U.S. Airways proposes merger to bankrupt AMR.

July 2012

- AMR creditors encourage AMR to merge with another airline, instead of emerging from bankruptcy alone.

September 2012

- AMR and U.S. Airways begin merger discussions.

November 2012

- U.S. Airways proposes merger, with its shareholders owning 30% of the new company.

February 2013

- Details of the merger are worked out.
- Merger filed with the FTC under Hart-Scott-Rodino Act.

END OF MODULE 11