Chapter 5 Airline Operating Costs and Measures of Productivity

Learning Objectives:

The student will know the following terminology:

- Airline Cost Categorization
  - Form 41 contains traffic, financial, and operating cost data reported to the DOT by US Major airlines
  - Administrative Cost Categories
    - Salaries and related fringe benefits for all personnel (general management, flight personnel, maintenance labor, other personnel)
    - Materials Purchased (fuel & oil, parts, passenger food, other materials)
    - Services Purchased (advertising & promotions, communications, insurance, maintenance, commissions, other services)
    - Landing Fees, Rentals, Depreciation, other Expenses
  - Functional Cost Categories –allocates costs to the different functions within the airline's operation
    - Flight operating costs/ Direct operating costs
      - Flying operations – Flight crew, Fuel costs
      - Maintenance – routine maintenance, extensive major checks, "labor & parts"
      - Form 41 reports maintenance for direct airframe, direct engine and overhead/ burden
      - Depreciation & Amortization
    - Ground operating costs
      - Aircraft servicing – handling aircraft on ground, landing fees
      - Traffic servicing – processing passengers, baggage and cargo at airports
      - Promotion and sales – airline reservation centers, ticketing offices, travel agency commissions, and distribution system fees
    - System operating costs
      - Passenger Service – meals, flight attendants, in-flight services
      - Advertising and Publicity
      - General and Administrative – can't be associated to a particular activity
      - Transport-related – costs associated with the generation of transport related revenues. Fees paid to regional airline partners, extra baggage expense, and other misc overhead
- Operating Expense Comparisons
  - Typical breakdown of FOC for US carrier:
    - CREW: Pilot wages and benefits
    - FUEL: Easiest to allocate and most clearly variable cost
    - MAINTENANCE: Direct airframe and engine maintenance cost, plus "burden" or overhead (hangars and spare parts inventory)
    - OWNERSHIP: Depreciation, leasing costs and insurance
  - Network Legacy Carriers (NLCs)

        - More Traditional Airlines
        - Operate large hub-and-spoke networks
        - Regional, Domestic and International Service
        - Big Six (American, United, Delta, Northwest, Continental, US Airways/ America West)
    - Low-Cost Carriers (LCCs)
        - Operate smaller networks
        - High proportion of point-to-point or non-hub
        - Reduced levels of service and low fares
        - Southwest, AirTran, Frontier, ATA, JetBlue, Spirit
    - Characteristics of all or at least most LCCs
        - Fleet Commonality – reduces the costs of spare parts, maintenance and crew training
        - Point-to-Point instead of connecting hub networks – reduces costs of handling connecting passengers and improves productivity of both aircraft and crews
        - No labor unions and lower wages – higher productivity due to less restrictive work rules
        - Single cabin/ class service – reduces complexity and costs
        - Open seating – less time processing passengers and no boarding passes, improves productivity and reduces costs
        - Reduced Frills – less seating space, no food and no beverages , increases ASM and reduces passenger service cost
        - No frequent-flyer programs – reduces administrative costs
        - Avoids traditional distribution channels – no travel agencies, no commissions, tickets directly from airline (website or phone)
- Comparison of Airline Unit Costs
    - Legacy vs. Low-Cost Airlines Unit Costs
        - Fuel expenses are compared under assumptions all airlines are subject to the same fuel price environment (They are not)
        - Fuel price hedging
        - Both NLC and LCC experienced a drop in unit costs after 2001 and a rise in unit costs after 2004
        - NLC's drop reflects cost-cutting strategies put in place after 9/11 (employee layoffs and passenger service cutbacks)
        - NLC's rise in costs primarily due to fuel prices
        - LCC's rise in costs tempered by their capacity growth during the same period
- Measures of Airline Productivity
    - Aircraft Productivity
        - Measured in ASMs generated per aircraft per day:
        - = (# departures) X (average stage length) X (# seats)
        - Aircraft "utilization" measured in block-hours/day:
            - Block hours begin at door close (blocks away from wheels) to door open (blocks under wheels)
            - Gate-to-gate time, including ground taxi times
        - Increased aircraft productivity achieved with:

                - More flight departures per day, either through shorter turnaround (ground) times or off-peak departure times
                - Longer stage lengths (average stage length is positively correlated with increased aircraft utilization = block hours per day)
                - More seats in same aircraft type (no first class seating and/or tighter "seat pitch")
        - Labor Productivity
            - Measured in ASMs per employee per period
            - As with aircraft, employee productivity should be higher with:
                - Longer stage lengths (amount of aircraft and traffic servicing for each flight departure not proportional to stage length)
                - Larger aircraft sizes (economies of scale in labor required per seat for each flight departure)
                - Increased aircraft productivity due to shorter turnaround times (more ASMs generated by aircraft contribute to positive employee productivity measures)
            - Yet, network airlines with long stage lengths and large aircraft have lower employee productivity rates
        - Airline Productivity Measures
            - Aircraft Productivity
                - Aircraft Utilization (block-hours per day)
                - ASMs per Aircraft per Day
                - Average Stage Length
                - Number of Departures per Day
                - Aircraft Capacity (seats per aircraft)
            - Employee Productivity
                - ASMs per Employee
                - ASMs per Labor Dollar
                - Revenue per Employee,
                - Revenue per Labor Dollar

<u>The student will be able to perform the following analysis (i.e. problems):</u>

- Able to calculate:
    - Flight operating costs Per Block Hour
    - Aircraft Servicing Costs Per Aircraft Departure
    - Traffic Servicing Costs Per Enplaned Passenger
    - Passenger Servicing Costs Per RPM
    - Able to calculate Airline Productivity Measures
        - Aircraft Productivity
            - Aircraft Utilization (block-hours per day)
            - ASMs per Aircraft per Day
            - Average Stage Length
            - Number of Departures per Day
            - Aircraft Capacity (seats per aircraft)
        - Employee Productivity

        - ASMs per Employee
        - ASMs per Labor Dollar
        - Revenue per Employee,
        - Revenue per Labor Dollar
- Discuss Legacy (NLC) versus Low Cost Carrier (LCC)
    - Operational Strategies and how they affect unit cost
    - Characteristics and how they affect unit cost