The Future of the Airline Industry: Viewing the Future via the Past

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The Best Clue to the Future is the Past.

- To project out into the future 20 years, it helps to look back in 20-year chunks (U. S. oriented chronology)
  - 1952 to 1972
    - Technology, the transition to jets under a regulated regime
  - 1972 to 1992
    - Deregulation and the first round of mergers
  - 1992 to 2012
    - Alliances, further mergers, the squeeze on union rents, and multiple bankruptcies
The Future for the U. S. Industry

- The U. S. – owned legacy network carriers have hit a wall
  - Income elasticity of air travel has fallen to 1.0
  - Price elasticity translates higher oil prices into lower traffic
  - No improvement in aircraft technology except for fuel efficiency
  - Main effects of the electronic revolution have already occurred

- This contrasts with the traditional regime in which innovations drove down real fares which increased traffic growth and yielded scale economies
The World ex-US

- The income elasticity is higher but still falling
- Technology involves not only fuel efficiency but also longer range
- Future favors the Asian carriers
- European legacy carriers: squeezed by super LCCs in Europe, Mideast carriers long-haul, fuel emissions charges, and airport constraints
- Geography protects North American carriers from Emirates (Etihad, Qatar)
US: Nominal Airline Revenue as a Percent of Nominal GDP
US: Nominal and Real Yield
The U. S. Transition from a Dynamic to a Stagnant Industry

- Nominal revenue / nominal GDP at a plateau since 1978
- RPMs / real GDP at a plateau since 1988
- Annual relative price decline in logs:
  - 1952-72 = -2.4%
  - 1972-92 = -1.2%
  - 1992-2011 = -0.1%
From a Luxury Good to an Everyday Good

- Regression of RPMs on real GDP and relative price (all in changes)

- **Income elasticity**
  - 1949-72 = 2.65
  - 1972-90 = 1.73
  - 1990-2011 = 1.05

- **Price elasticity = -0.58**
  - Compared to -0.56 in Berry-Jia AEJ Micro 2010, data for 2006, average of leisure and business travel demand
To Make Matters Worse, Real GDP Growth Is Slowing Down

- U. S. growth in real per-capita GDP 1929-2007 = 2.2% per year
- In 2007 I wrote a paper forecasting a slowdown to 1.4% per year 2007-27
- As of 2012:Q1 we are now 8.1 percent below that historically unprecedented slow growth path.
- And GDP growth is slowing relative to GDP per capita, due to merciless hounding and deportation of illegal immigrants
The Domestic Industry Has Reached Technological Stasis

- 1952-72, the technological revolution
- In 1952 NYC-LAX required a connection at MDW or DAL. 12 hours westbound
- 1953, nonstop DC-7s, the "AA Mercury"
- 1959, nonstop 707s. 707 delivered 20x net revenue compared to the DC-7 for about 3x the purchase price. A technological revolution.
- Conversion to short-haul jets complete by 1971 (727, 72S, 737-200, DC-9-20/30/50)
A Reminder About Technological Stasis

- DL still flies the DC-9-50, manufactured in the mid 1970s and thus roughly 35+ years old.
  - My pilot friend’s report: there are 21 D95’s left.
  - Passengers on the D95 don’t know that they are not on a MD-90. Now-retired D93 (1968) same.
  - Fuel economy improvement from D95 to 73G (current generation) is 15 percent.

- Conclusion: consumer welfare has not improved since 1968 for narrowbodies.

- RJs? **Good:** replace props, new nonstop routes, no center seats. **Bad:** waiting for that roll-aboard.
In an All-jet world, How the Industry Changed 1972-92

- **Deregulation: Pricing**
  - Pricing rationalized. Previously long-haul overcapacity (piano bars) with paucity of short-haul frequency and service

- **Deregulation: Network Effects**
  - Mythology that point-to-point nonstop service was replaced by connections
  - Few nonstop routes between major cities were discontinued. 422 of top 500 markets had nonstop service in both 1978 and 1989
  - All residents of new hub cities benefitted from proliferation of new nonstops
  - Interline connections fell by a factor of 10, from 40 percent to 4 percent

- **FF Benefits:** Made possible by deregulation plus advances in computers
The Role of Unions

- Legacy labor costs make it inevitable that legacy firms must shrink
  - Low-cost competitors (Toyota vs. GM), (Wal-Mart vs. Sears) grow faster, thus have younger employees.
  - Older firms have more unions, higher wages, lower productivity, as well as legacy pension and retiree medical care costs.

- The Big-3 auto recovery and the legacy airlines
  - UAW agreed to two-tier wage systems
  - Outsourcing to RJs allows airlines a two-tier system
  - Consolidation to “Big Three” network legacies accelerates the decline of unions (would any president allow strike?)
Union Rents and Their Consequences

- During most of the postwar era there has been a long line of applicants desiring to become airline pilots.
- The applicants are willing to work for far less than the incumbent flight crews.
- Thus the incumbents earn a rent that distorts markets.
- Airline strikes were frequent before 1990:
  - Disruption, mutual aid pacts
  - Helped to cause liquidation of EA under Borman
  - Actions in last decade rule out a strike as an option for the major network carriers.
Why Pilot Union Rents are Different

- In a competitive labor market salaries would have been far different
  - Long-hauls easy, fewer duties, lower pay
  - Short-hauls more work, more duties, higher pay
- Bankruptcy laws allowed airlines to escape union contracts, but couldn’t save EA, PA, TW
- High point of union arrogance the UA ESOP 1994-2000 when Rick Dubinsky promised to “wring the neck of the golden goose”.
- The golden goose turned to a lead weight
The Biggest Changes during 1992-2012?

- Aircraft downsized from domestic widebodies. New outsourcing to RJs owned by other non-union suppliers
- Electronics and the web
  - Airline web sites bring purchase in-house and reduce GDS fees
  - Increased ease of comparing fares put further downward pressure on legacy fares
- Electronics
  - Lobby e-kiosks eliminate most waiting in line (except for TSA)
  - Lots of gate screen information for standby passengers
The Next 20 Years: the U.S.

- Continued evolution of consumer-friendly web apps. Eventually weather and maintenance-related delays may lead carriers to implement automatic rebookings.
  - A basic impediment to consumer-friendly proactive rebookings: high fees to change tickets for most passengers
- Three legacy carriers (AA+US, DL, UA) will continue trying to beat down their legacy costs
  - Qualifications: WN’s costs are rising faster than legacies as WN becomes a quasi-legacy. Competition from low-cost Air Tran is eliminated by merger
  - Continued price competition from B6, Allegiant, Spirit
- Safe prediction: the relative price of air travel will increase, no longer decreasing. Cozy and lazy trio.
The Next 20 Years: Aircraft Size

- Artificial gaps now due to union scope clauses
  - Classic example AA: few planes between 50 and 140 seats
- The next 20 years will even this out
  - Liberalized scope clauses
  - Legacies buying 90-120 seat planes to be flown by union pilots at reduced wages
  - Scheduling efficiency by having a continuum of aircraft sizes
World Ex US: Nominal Revenue as a Percent of Nominal GDP
World Ex US: RPM Divided by Real GDP
World Ex US: Nominal and Real Yield
Asia is the Future

- Companies are newer, fewer legacy costs
- Costs are lower because of dense routes, use of wide-bodies on relatively short routes
- In some countries airline passengers per year per member of the population are still 1/10 of U. S. and Western Europe implying lots of potential for future growth
- China’s protection of its Big 3 airlines and suppression of LCC’s
- How will Asian and U. S. airlines share future growth in Transpacific traffic?
- *When will the U. S. finally eliminate tedious visa delays and procedures for Asian tourists?*
Most Threatened Now: EU Legacy Network Airlines

- Reasons why the big European legacy firms are in big trouble. Will they eventually disappear? (BA, AF/KL, LH, AZ, IB, SK)
  - The power of unions, the social welfare state, and the difficulty of voiding union contracts through bankruptcy
  - The competition of Ryanair, Easyjet, and the new low-cost carriers on their money-losing intra-Europe routes
  - Traditional markets Europe-Asia are becoming dominated by the big three Middle East carriers (EK, EY, QR).
  - But don’t bet on EK quite yet; it may finally have ordered too many planes. DXB-RNO in a 380?
Reasons U. S. Legacy Airlines Face a Smaller Threat

- The brutal battles of bankruptcy are largely over, whereas European carriers have barely begun facing legacy union costs.

- Geography makes the Middle East carriers largely irrelevant,
  - While DXB is a perfect connection spot for Europe to India and Australia, it is irrelevant for US-Europe, and US-Asia (BOS-PEK +3000 miles), and US-Australia (JFK-SYD +4000 miles).
  - Exception: India (SFO-BLR +400 miles)
  - May wipe out not only future nonstops US-India but also the future existence of India-based carriers.

- US LCCs (WN, B6) are more mature than Ryanair and EasyJet.
  Costs of WN and B6 are inexorably creeping up relative to the network legacies.
How Will EU Legacies Adjust?

- LH has just announced cancellation of 7 long-haul routes to secondary Asian destinations
  - Other LH problems – high taxes, EU emissions trading, night flying ban at FRA. It claims $900 million per year
  - BA faces permanent constraint of two runways at LHR
- Incentive to move aircraft to NA and SA routes
  - But with revenue sharing under JV’s, benefits would be shared with U. S. alliance partners
- How will the EU legacies survive?
  - Wages have to fall, productivity has to rise
  - A future of strikes, slowdowns?
  - *Will governments let one of them fail?*
- **Conclusion:** Stasis inside the U. S., Drama Outside