



Massachusetts  
Institute of  
Technology

# US AIRLINE COST AND PRODUCTIVITY CONVERGENCE: DATA ANALYSIS

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October 25, 2007



Time	Status	Destination
10:40	ON TIME	CHICAGO, IL
10:45	ON TIME	CHICAGO, IL
11:00	ON TIME	KNOXVILLE, TN
11:00	ON TIME	SAN ANTONIO, TX
11:15	ON TIME	CHIHUAHUA
11:15	ON TIME	MEMPHIS, TN
11:20	ON TIME	FORT WALTON BEACH, FL
11:20	ON TIME	DEL RIO, TX
11:20	ON TIME	TORREON, MEXICO
11:20	ON TIME	HOT SPRING, AR



## US AIRLINES: A Tale of Two Sectors

- **US Network Legacy Carriers**

- Mainline domestic capacity (ASMs) is almost 20% lower today than in 2000 – shifts to smaller aircraft and commuter airlines
- Bankruptcies at US, UA, DL and NW have reduced excess capacity, allowed for labor cost reductions and increased productivity
- AA and CO have re-structured to remain competitive without Chapter 11 (CO stock value doubled in 2006)
- All network carriers have also shifted capacity to international routes

- **Low Cost Carriers**

- LCC share of domestic passengers has increased to over 26%, from 16% in 2000 and only 5% in 1990
- But unit cost advantages of new entrants tend to disappear as both aircraft and employees mature
- Continued ASM growth is to maintain lower unit costs, but not clear there are enough market opportunities for all of the narrow body aircraft on order by LCCs.

# Legacy and Low Cost Airlines

## LEGACY AIRLINES

AA – American Airlines

UA – United Air Lines

DL – Delta Air Lines

CO – Continental Airlines

NW – Northwest Airlines

US – US Airways

- Legacy group carried 70% of total US airline traffic in 2006.

## LOW COST AIRLINES

WN – Southwest Airlines

HP – America West Airlines

B6 – JetBlue Airways

FL – AirTran Airways

F9 – Frontier Airlines

NK – Spirit Airlines

- These airlines carried another 19% of US traffic.

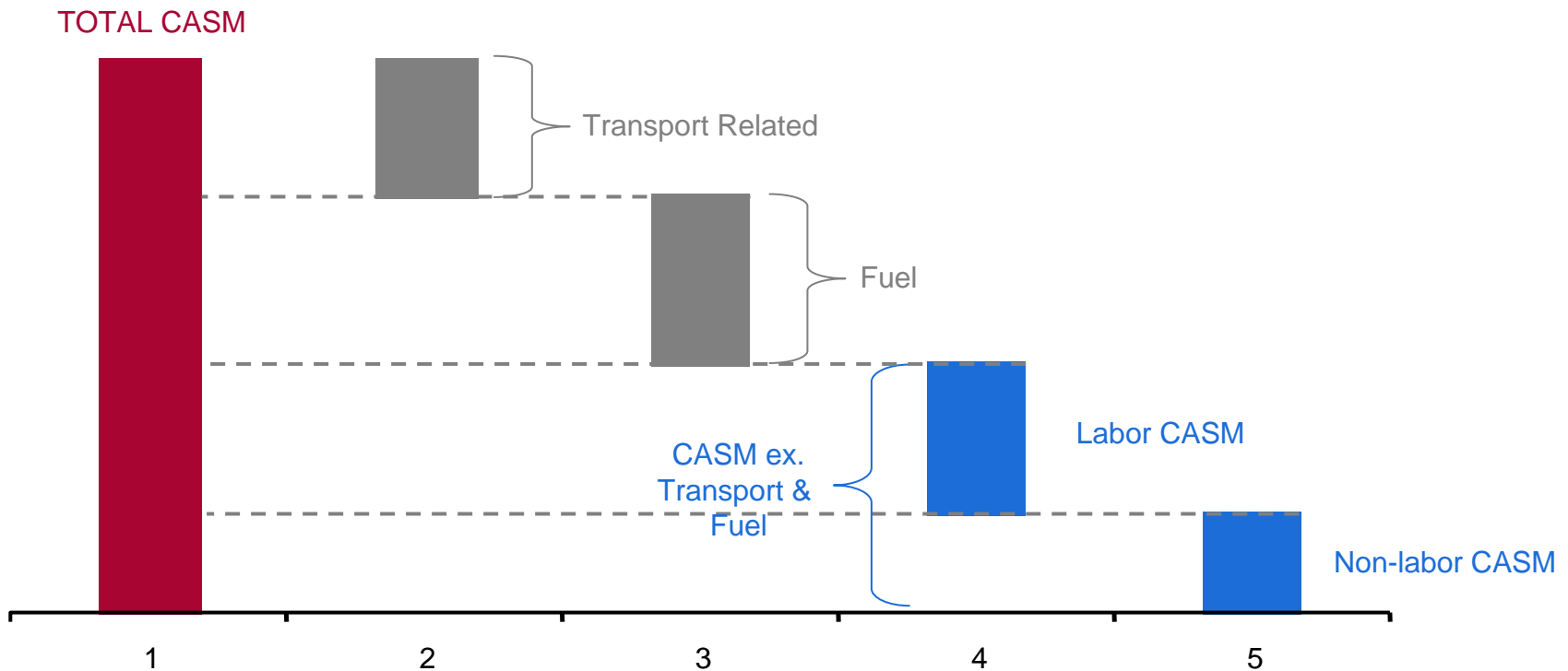


## Unit Cost Convergence?

- Depends on what costs are included in comparisons
  - LCCs still have lower total unit costs than NLCs at all stage lengths
  - But NLC reported costs include “Transport-related” payments to regional commuters
    - Important to get to true mainline to mainline comparison
- The unit cost gap has narrowed dramatically
  - If we exclude these “Transport-related” payments and fuel
  - NLCs have seen large drops in labor and other cost components
- Heading towards cost convergence with LCCs?
  - Legacy unit costs will continue to decrease in the short term, although new profits will make labor negotiations even tougher
  - Difficult for LCCs to keep costs from going up – aging fleets and employees

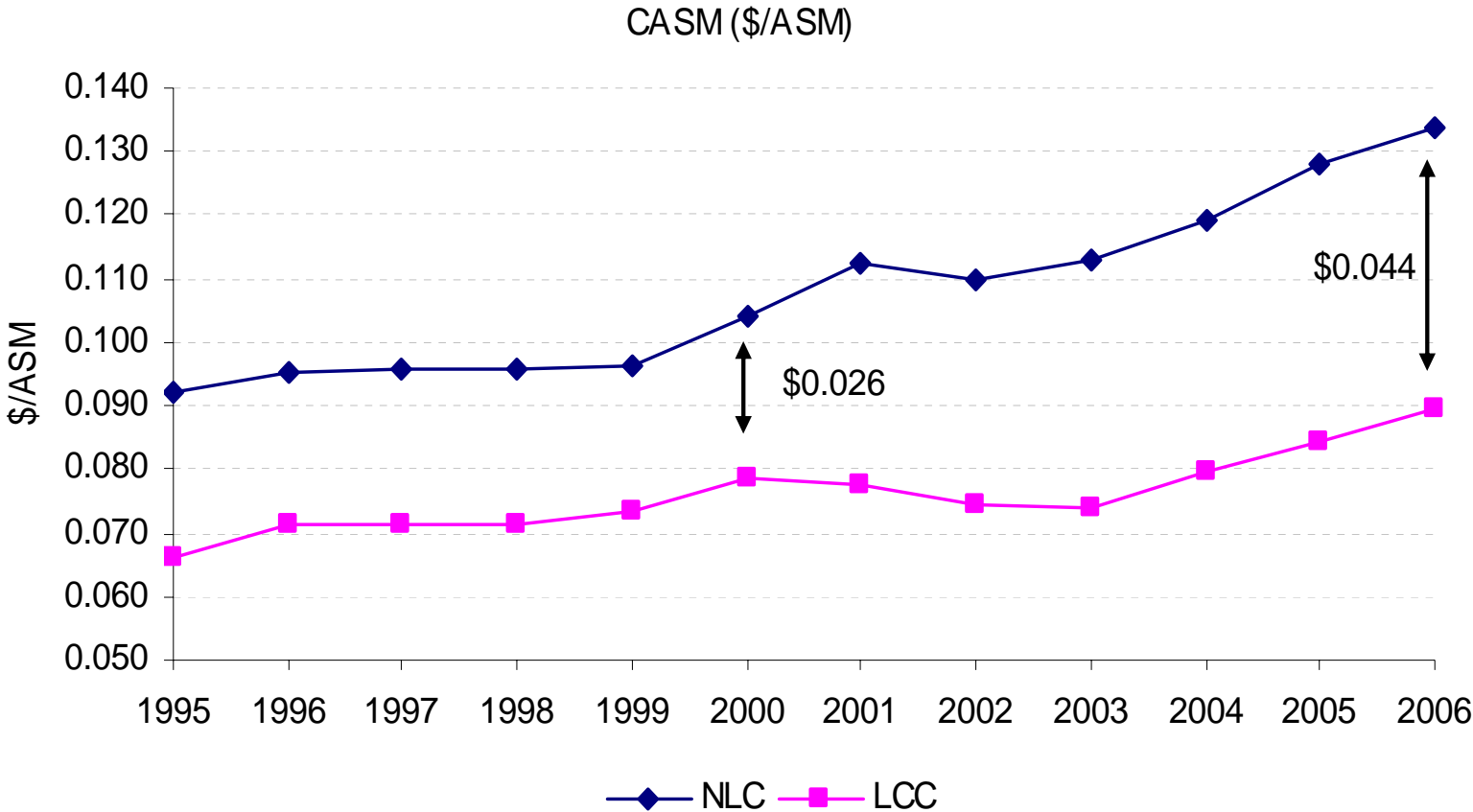
# CASM Breakdown

- CASM can be broken down as follows:
  - Transport Related and Fuel expenses excluded for comparisons



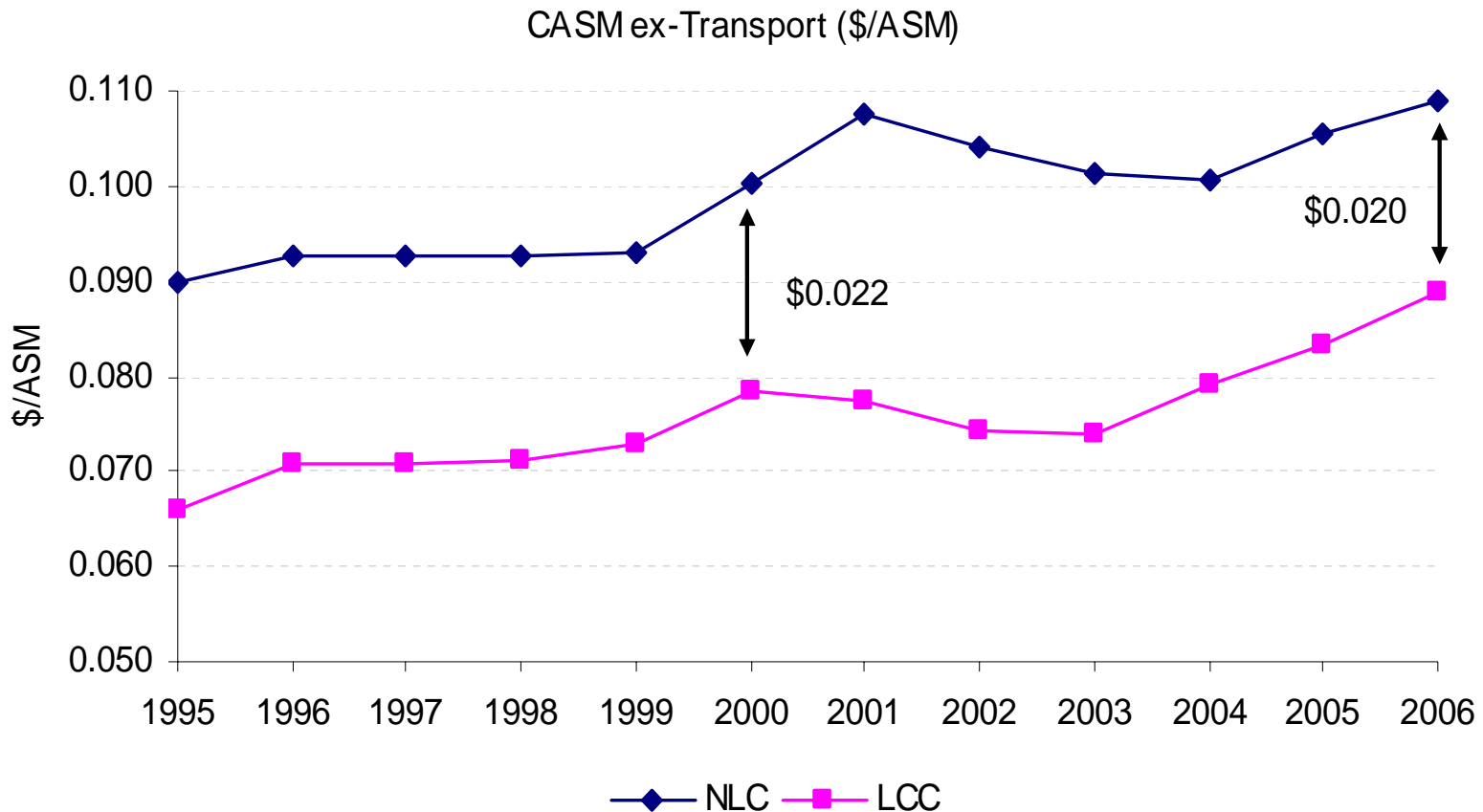
# Unit Cost (CASM) by Airline Group

TOTAL Unit Costs appear to be diverging, but this comparison includes "Transport Related Expenses" paid by NLCs to commuters, and is misleading.



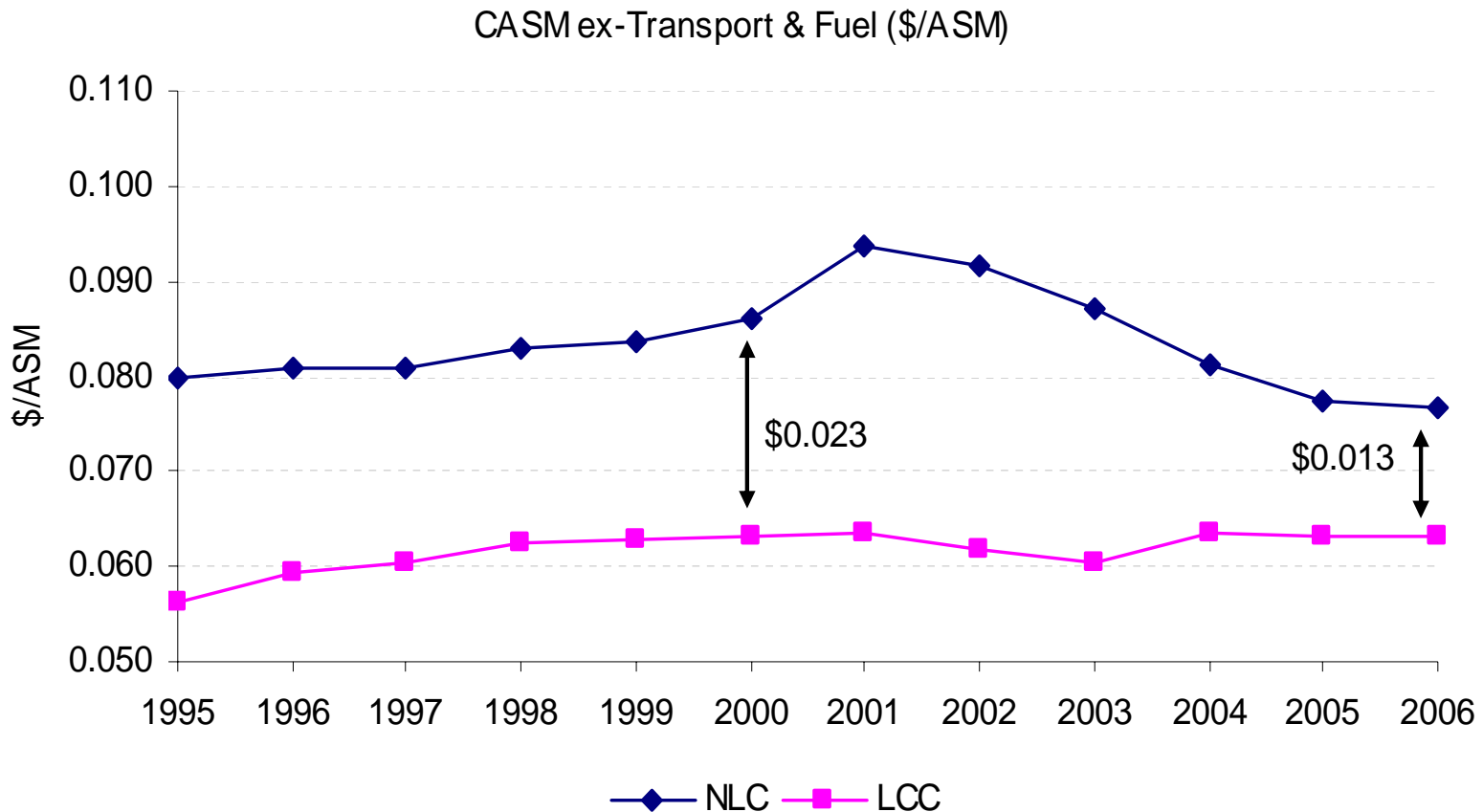
## Unit Costs (excl. "Transport Related")

Exclusion of "Transport Related Expenses" paints a different picture in unit costs, and shows some recent convergence.



# Unit Costs (excluding "Transport" & Fuel Expense)

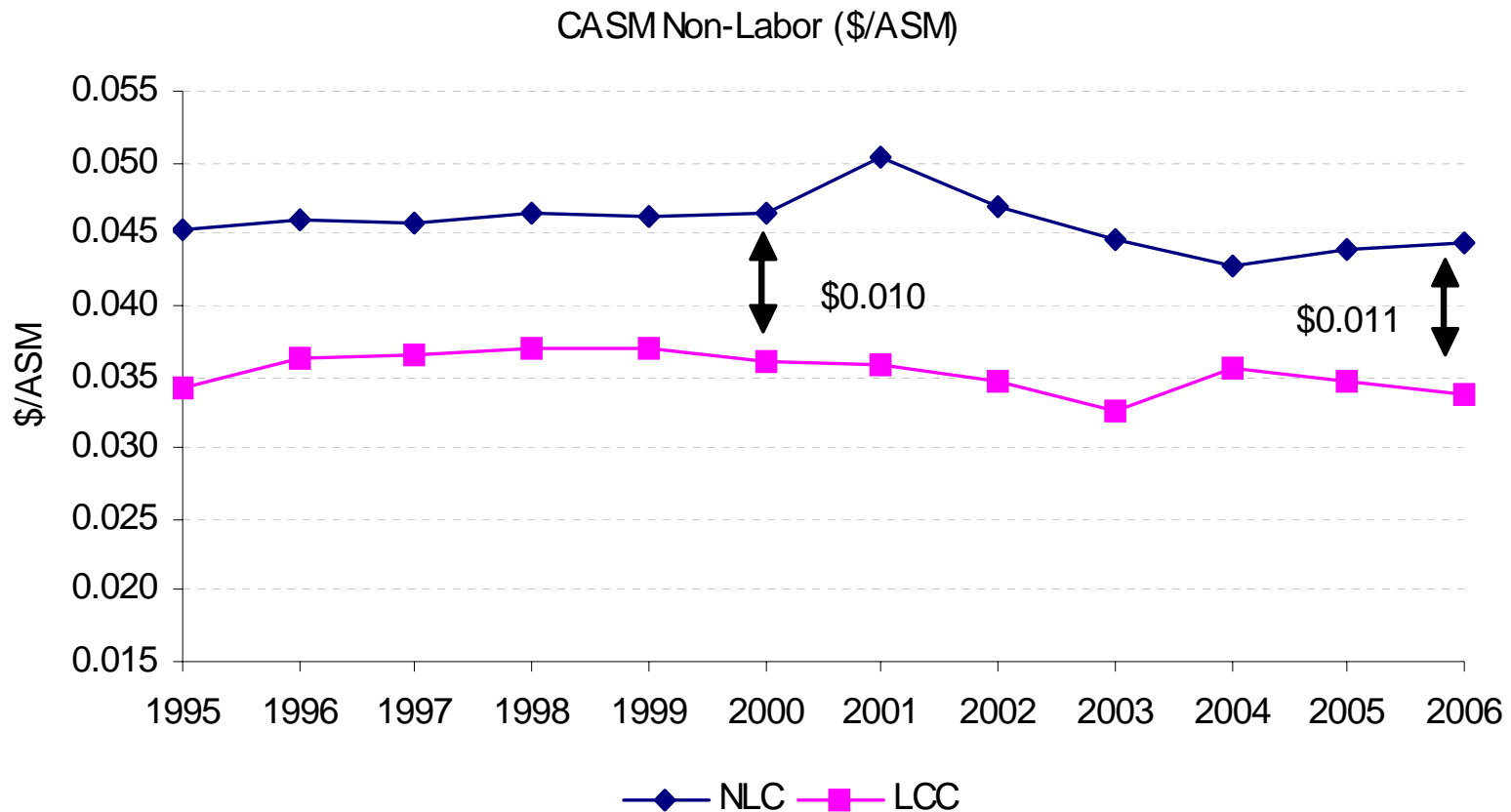
Excluding both Transport Related and Fuel costs reveals greater convergence  
(Southwest's fuel hedging and NLCs older fleets).





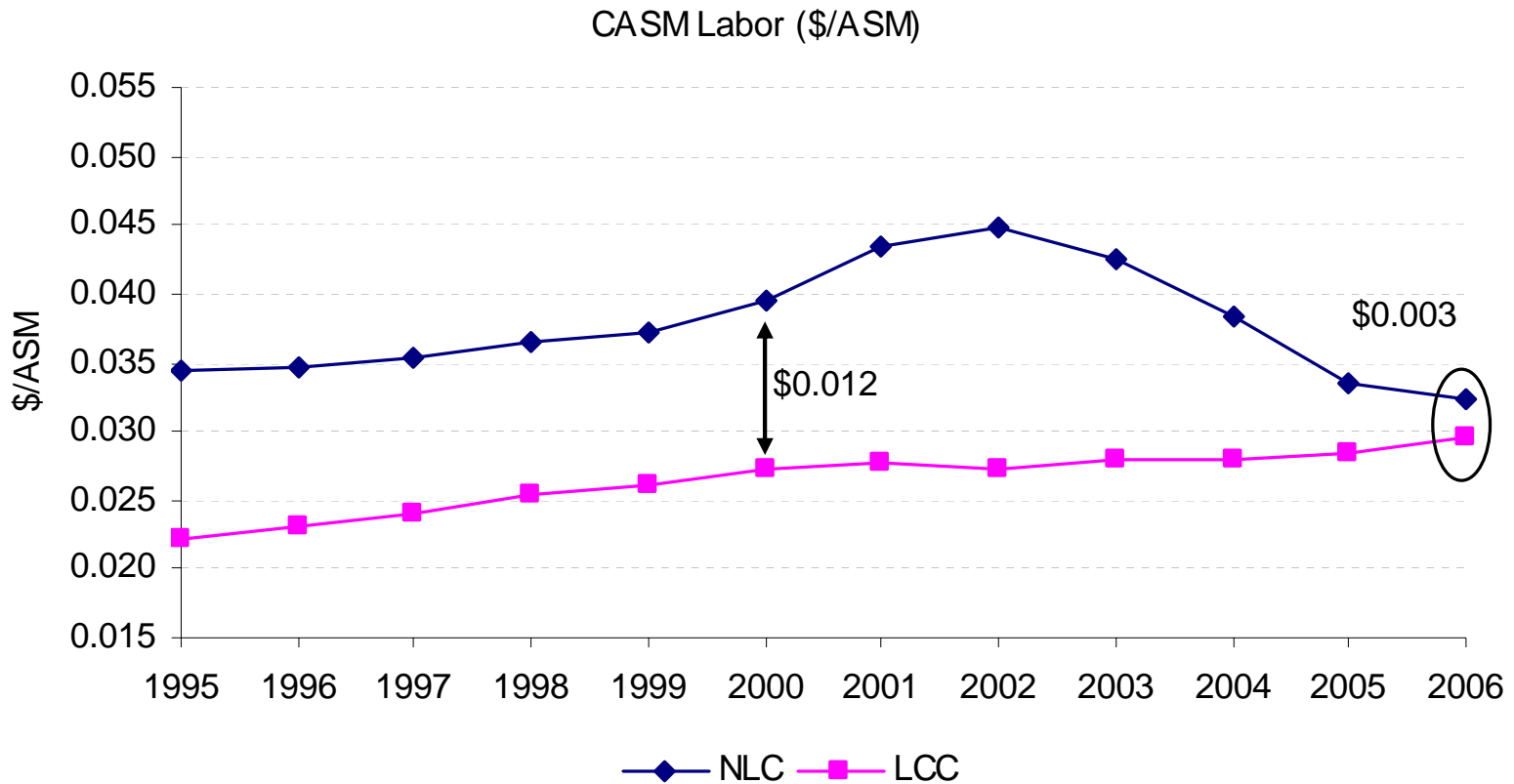
# Non-Labor Unit Costs (excl. Transport, Fuel and Labor)

Gap in Non-Labor, Non-Fuel, Non-Transport unit costs remains...



# Labor Unit Costs

...while Labor Unit Cost gap has almost been eliminated by NLC cuts and LCC labor cost increases.



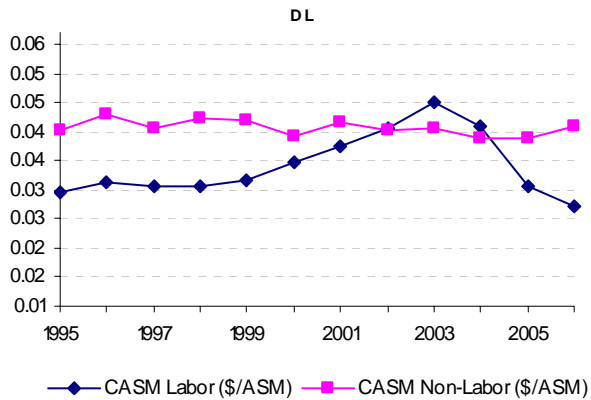


## Labor v. Non-labor Unit Cost Reductions

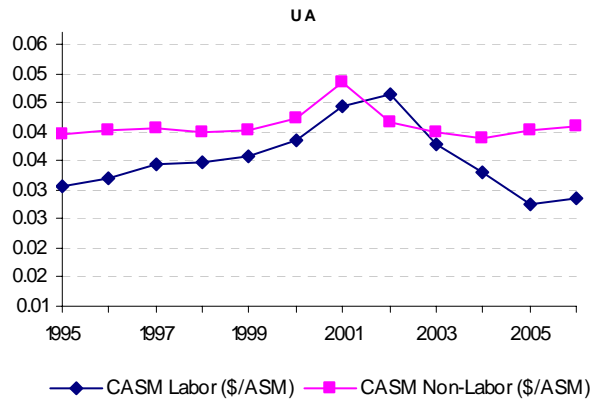
- Fuel is now the largest single expense to an airline
  - Not limited to the US
  - Increase in fuel expense over the past 5 years has dwarfed the savings gained from labor
- The relationship between labor and non-labor costs will certainly be an important economic discussion as labor negotiations restart
  - Very different stories for each carrier
- Concern is whether cost reductions in each area can be sustained
  - Again very different stories for each carrier
- Significant questions remain as to just how much more non-labor cost cuts can be made given network configurations, infrastructure/airspace issues and finding the supply/demand balance that can sustain industry profitability

# Labor & Non-labor CASM – Network Legacy Carriers (NLCs)

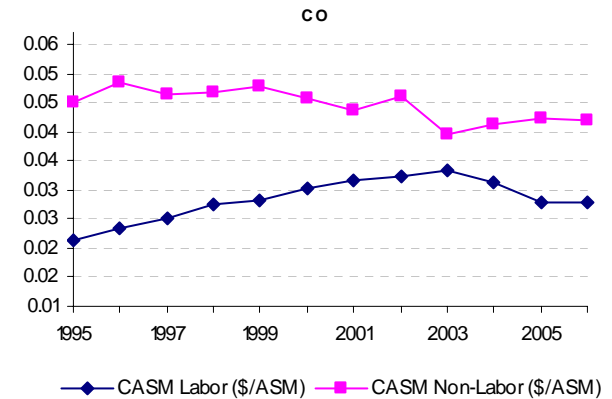
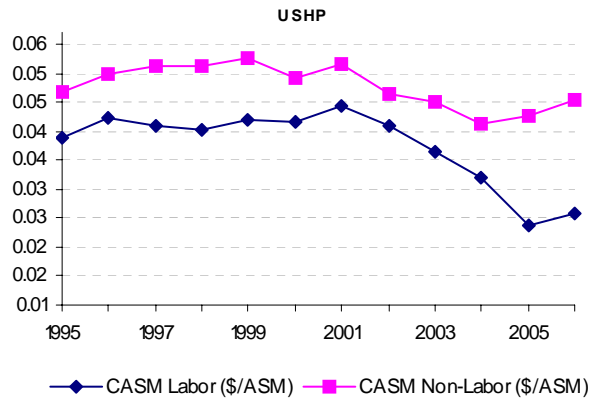
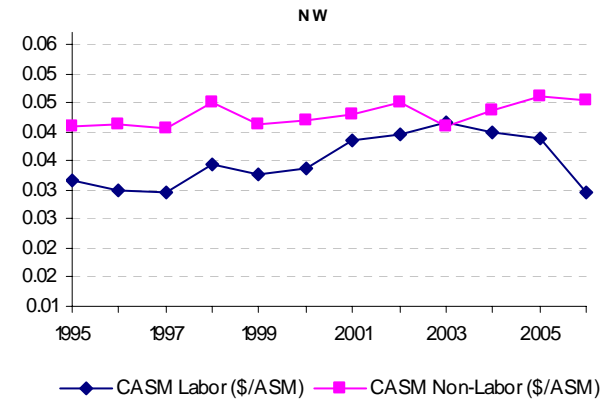
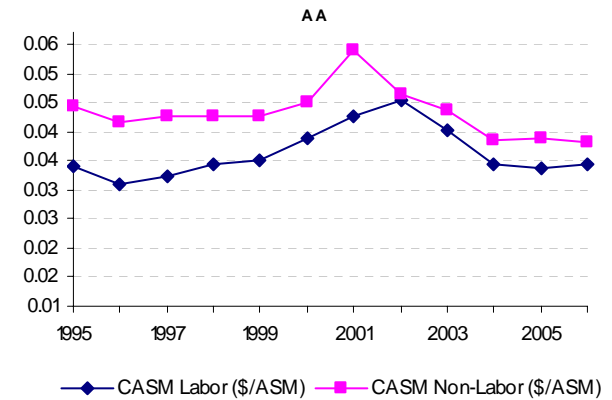
Most recent bankruptcies: DL & NW



Prior bankruptcies: UA & USHP

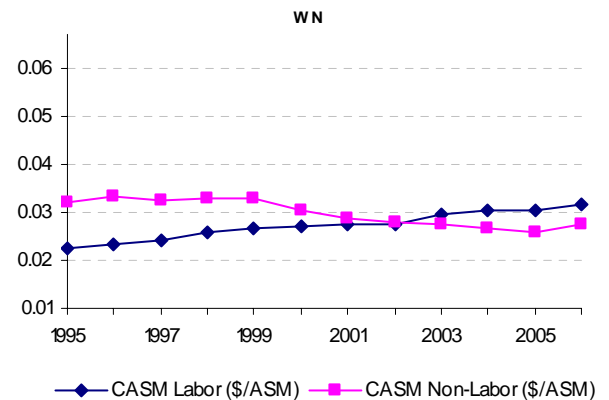
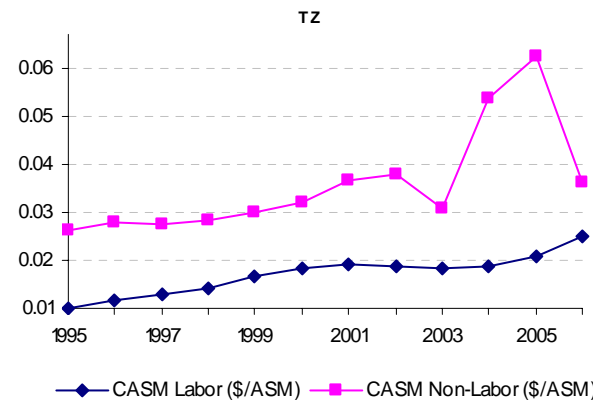
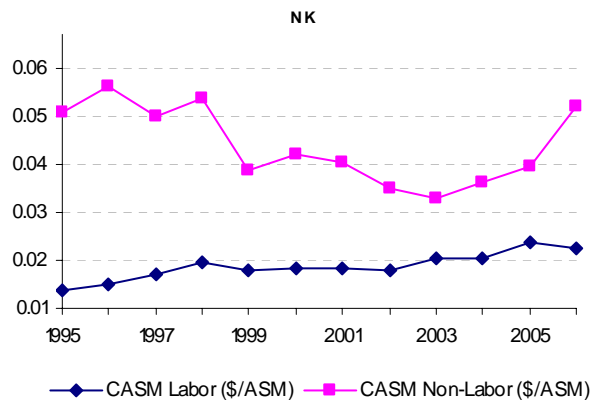
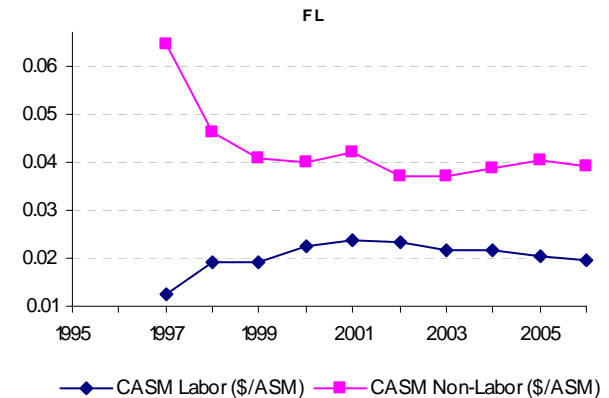
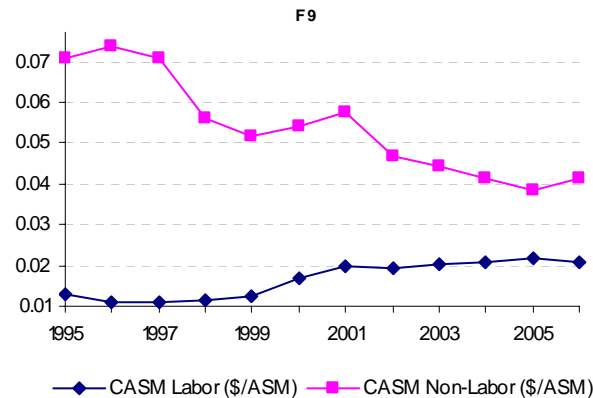
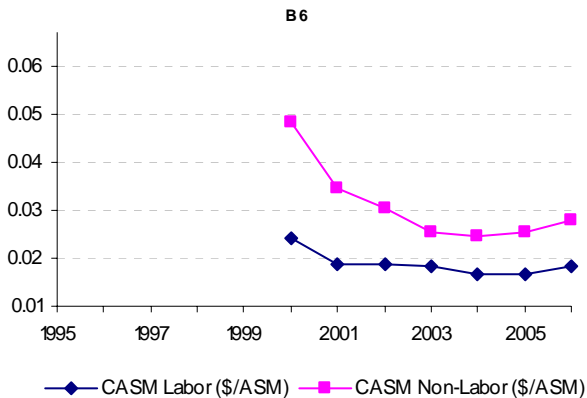


No bankruptcies: AA & CO



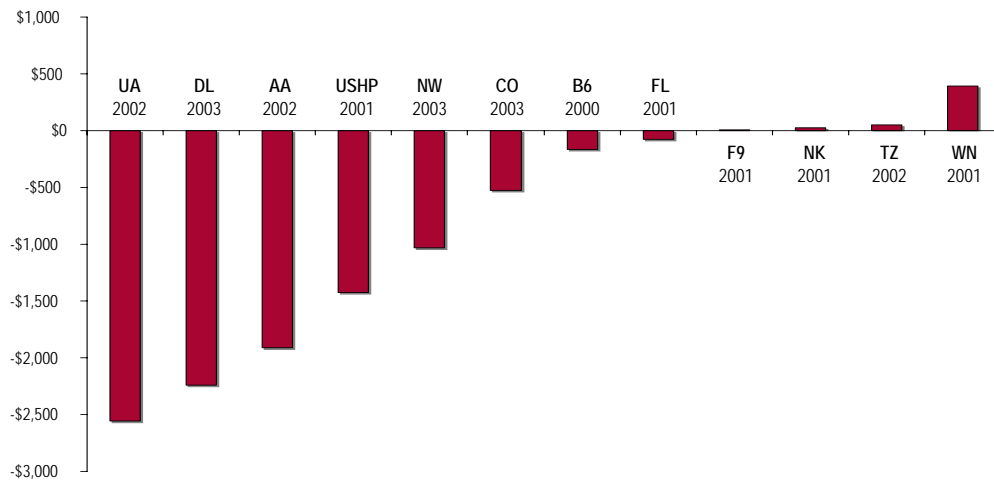
# Labor & Non-labor CASM – Low Cost Carriers (LCCs)

What Happens to Southwest, JetBlue and AirTran as Growth Slows?

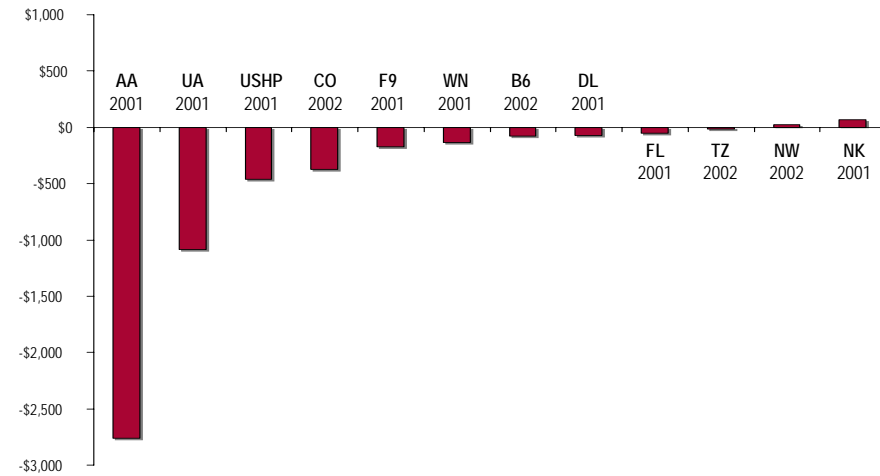


# A Different Story for Each Carrier

**Annual Run Rate Labor Cost Change  
\$ Millions  
Peak Labor CASM**



**Annual Run Rate Non-Labor Cost Change  
\$ Millions  
Peak Non-Labor CASM**



*Peak CASM is defined as highest unit cost since 2001.  
Annual expense reduction calculated using 2006 ASMs.*

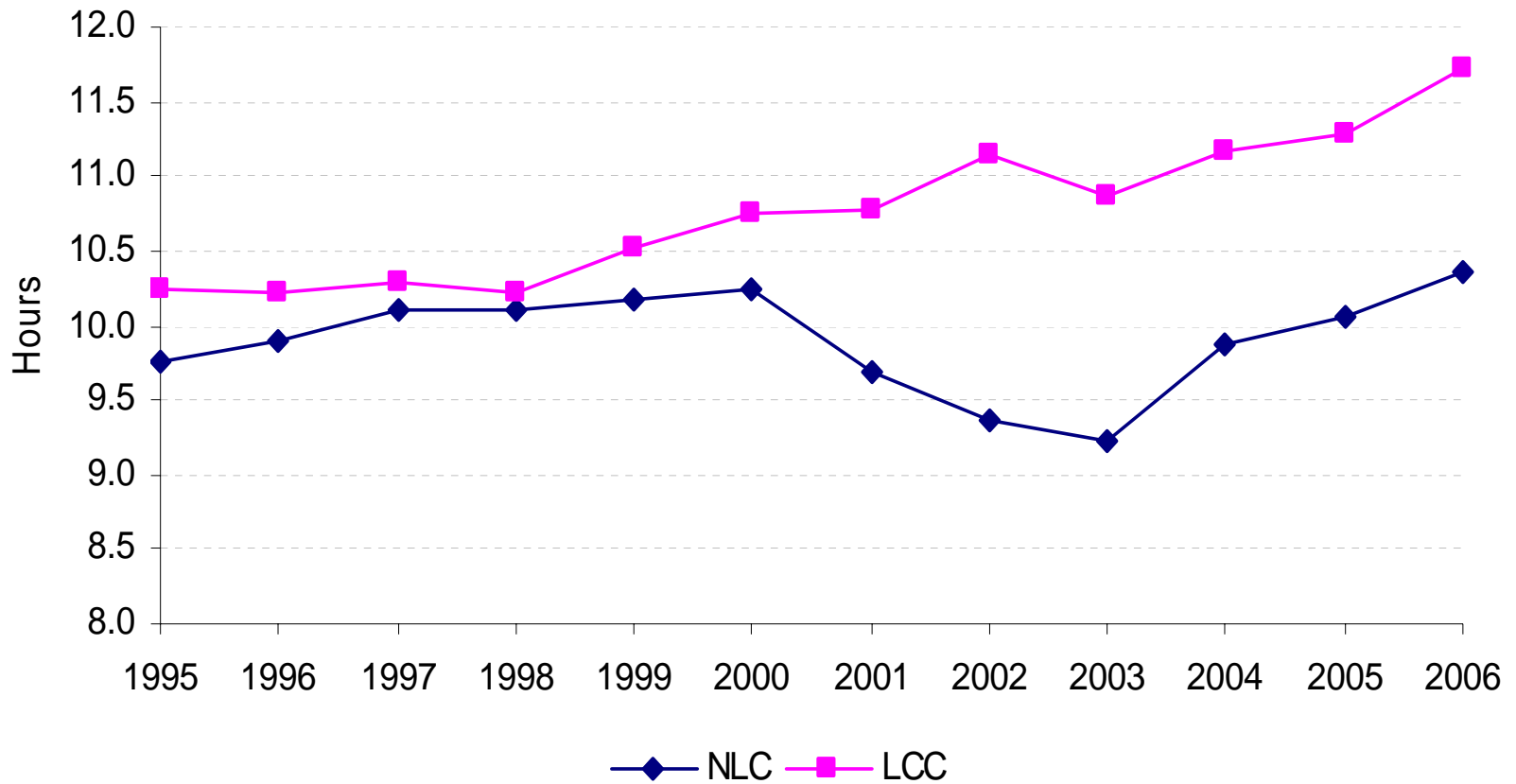


## What a Difference 5 Years Makes

- Lower costs + improved productivity (+ revenue premium) = Return to profitability for NLCs
  - Network Legacy Carriers have been re-structuring, shifting capacity, and cutting costs while improving productivity
  - In 2006, the network legacy carriers were once again more profitable than the LCC sector (operating profits)
- Aircraft productivity gains are part of the explanation
  - Legacy airlines utilization (block hours/day) increasing after big decline, but LCC aircraft utilization still 12% higher
  - Legacy carrier aircraft ASMs/day have surged, due to use of larger aircraft on longer (international) routes
  - But Low-Cost carriers have also increased stage length and maintain advantages in turn times, non-hub services.

# AIRCRAFT UTILIZATION

BH/AC Day (Hours)





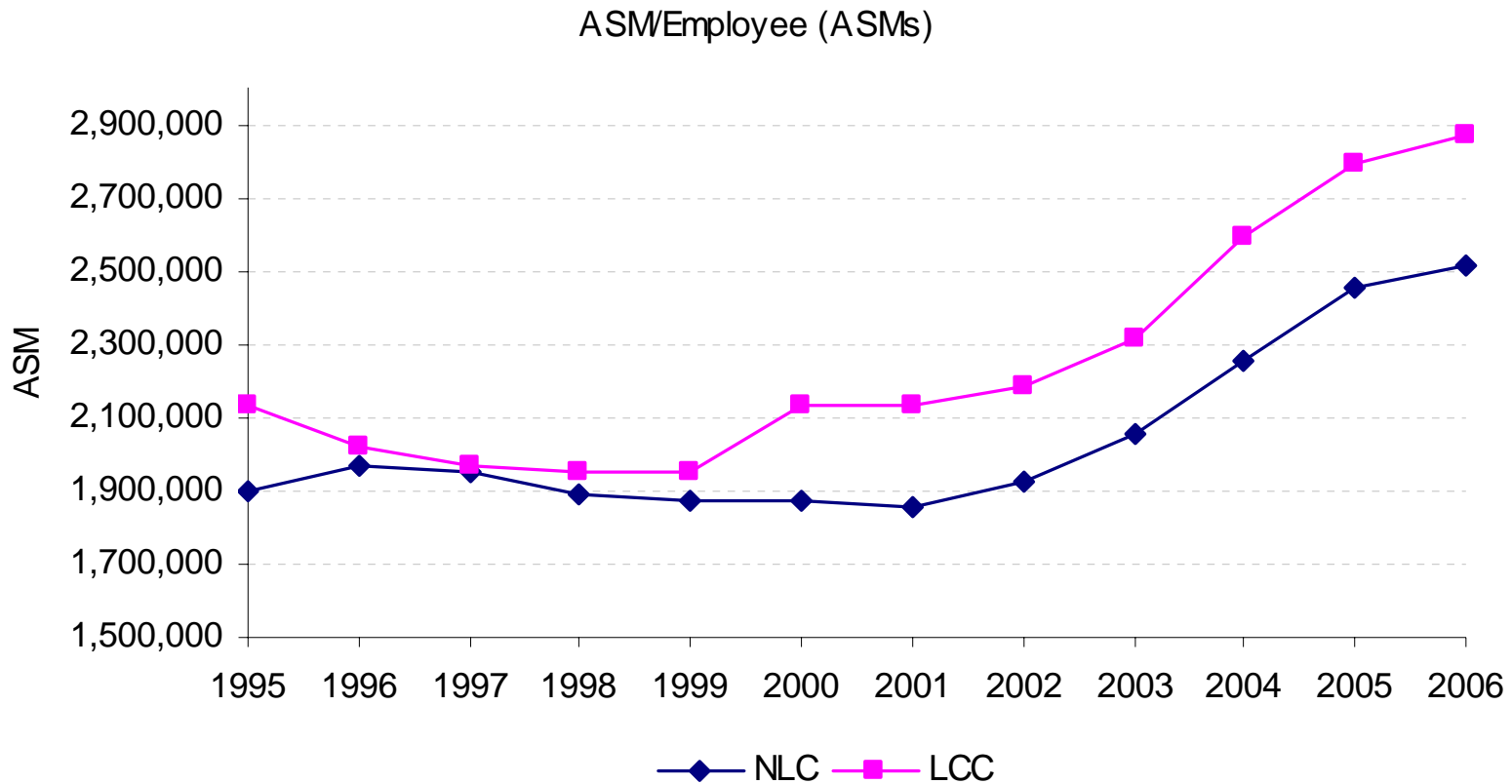


## Employee Productivity Has Also Increased

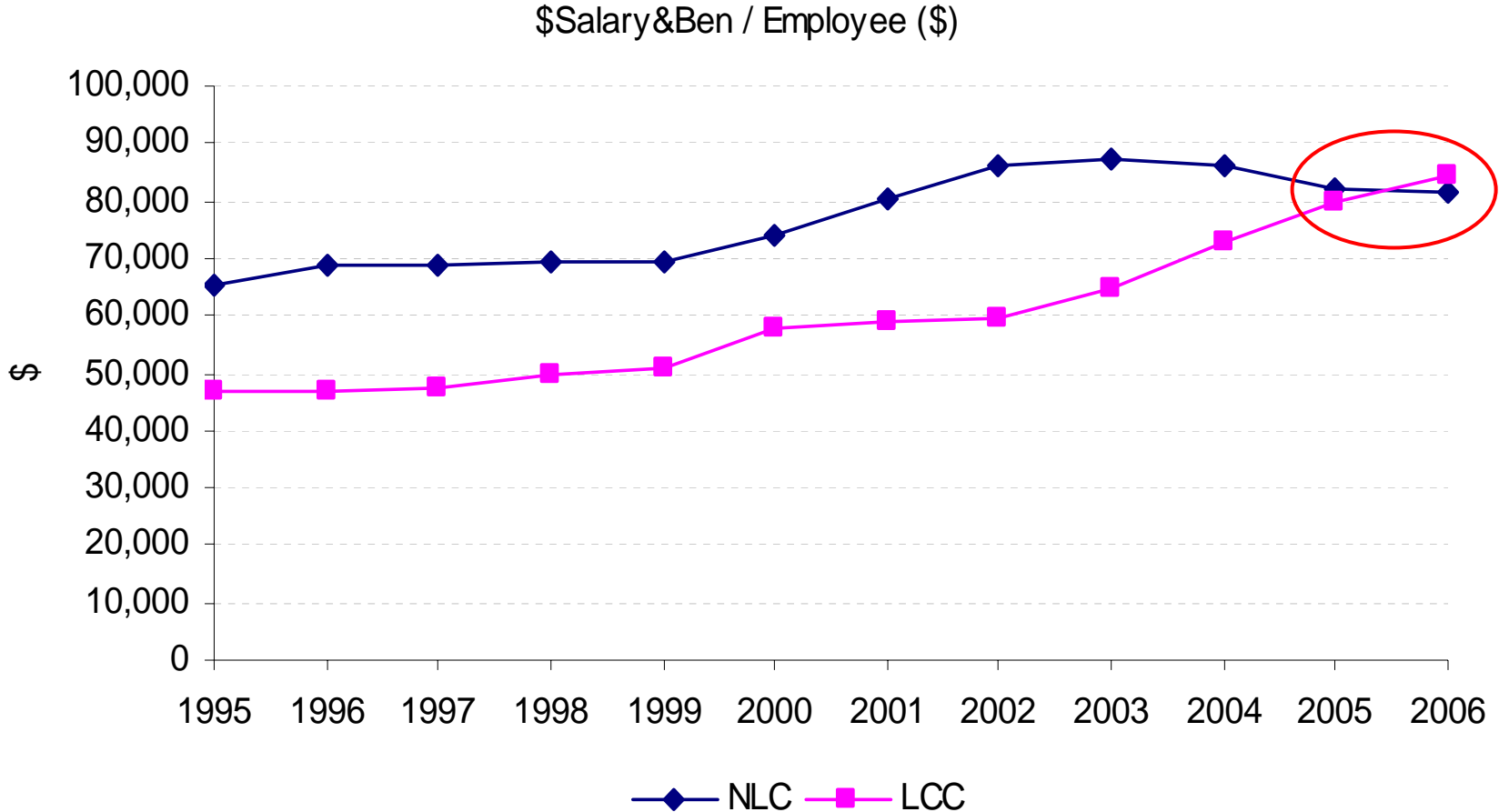
- Measured in ASMs per employee per period
  - Increases in this measure can be driven by both fewer employees and larger aircraft, longer stage lengths
  - In addition to less restrictive work rules, etc.
- Legacy carrier employee productivity is up almost 35% since 2000, but still lags LFAs
  - 25% reduction in legacy workforce
  - Salary & benefit gap with LFAs has narrowed dramatically
  - ASMs produced per dollar of salary + benefits is converging also

# ASM per Employee

Both sectors have made huge gains in employee productivity – ASMs/employee up by 35% since 2000, but LCCs still 16% higher.



# Gap in Salaries/Benefits per Employee Disappeared in 2006





## Recent Trends: Legacy vs. Low Cost

- Significant turn-around by US Legacy carriers
  - Chapter 11 bankruptcy actions by US, UA, DL and NW
  - Similar shifts at AA and CO without Chapter 11
- Focus on cost cutting and improved productivity
  - 35% increase in employee productivity in both NLC and LCC sectors
  - Huge cost savings in distribution, passenger service
- Heading towards cost convergence with LCCs?
  - NLC unit costs decreasing, while LCC costs will face upward pressure
    - aging fleets and employees
  - Tremendous NLC success in cutting labor costs could pose problems in upcoming labor negotiations, and raises questions of sustainability