

# **The Great Jetliner Hope**

## **Issues In Civil Aviation Competitiveness**

**Presentation to National Academies  
Aeronautics Research and Technology Roundtable**

Washington, DC

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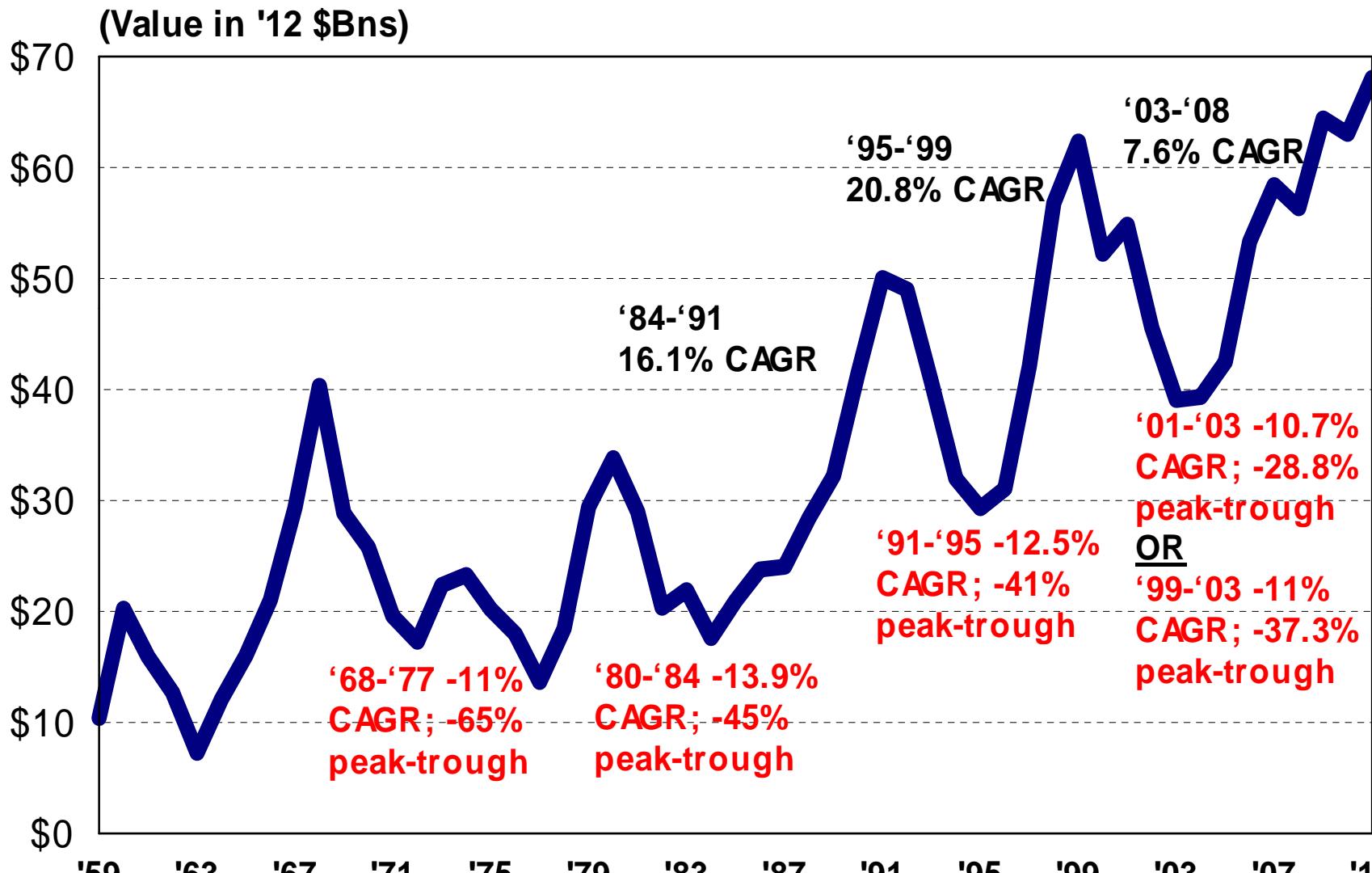
February 2012

# Aircraft Markets, Through Good And Bad Years

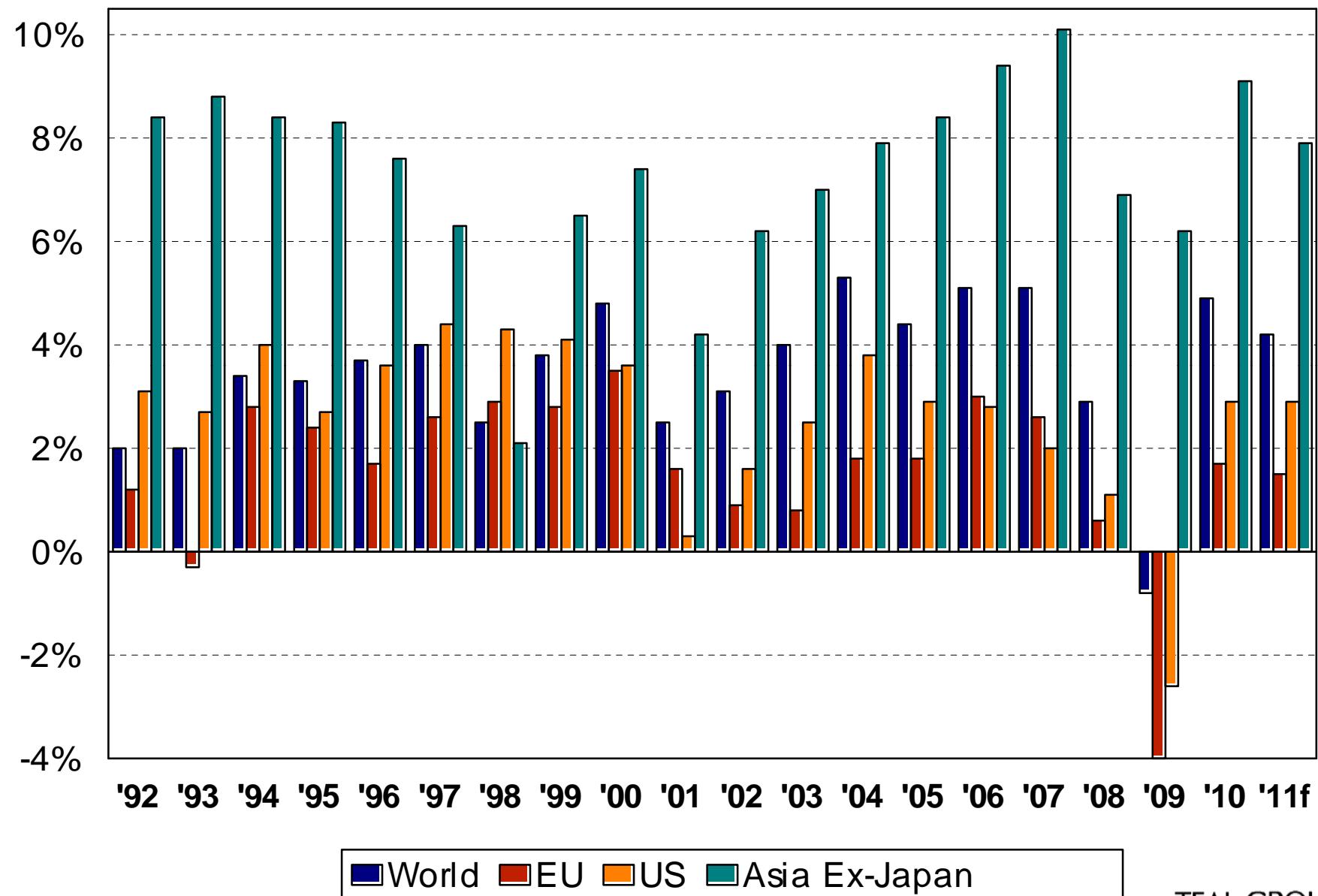
<u>Worldwide Deliveries</u> <u>By 2012 \$ Value</u>	<u>CAGR</u> <u>'03-'08</u>	<u>CAGR</u> <u>'08-'11</u>	<u>Change</u> <u>'08-'11</u>	<u>Change</u> <u>'10-'11</u>
<b>Large Jetliners</b>	7.6%	6.5%	20.8%	8.0%
<b>Business Aircraft</b>	17.5%	-13.7%	-35.8%	-10.7%
<b>Regionals</b>	4.1%	-10.1%	-27.3%	-2.0%
<b>Civil Rotorcraft</b>	17.1%	-7.6%	-21.2%	3.8%
<b>Military Rotorcraft</b>	8.7%	13.5%	46.2%	12.6%
<b>Fighters</b>	1.5%	7.4%	23.9%	4.5%
<b>All Civil</b>	<b>9.8%</b>	<b>-0.2%</b>	<b>-0.7%</b>	<b>3.7%</b>
<b>Total</b>	<b>8.1%</b>	<b>1.7%</b>	<b>5.2%</b>	<b>3.8%</b>

# Our Forgotten Nemesis...Cyclical

## Large Jetliner Deliveries By Value



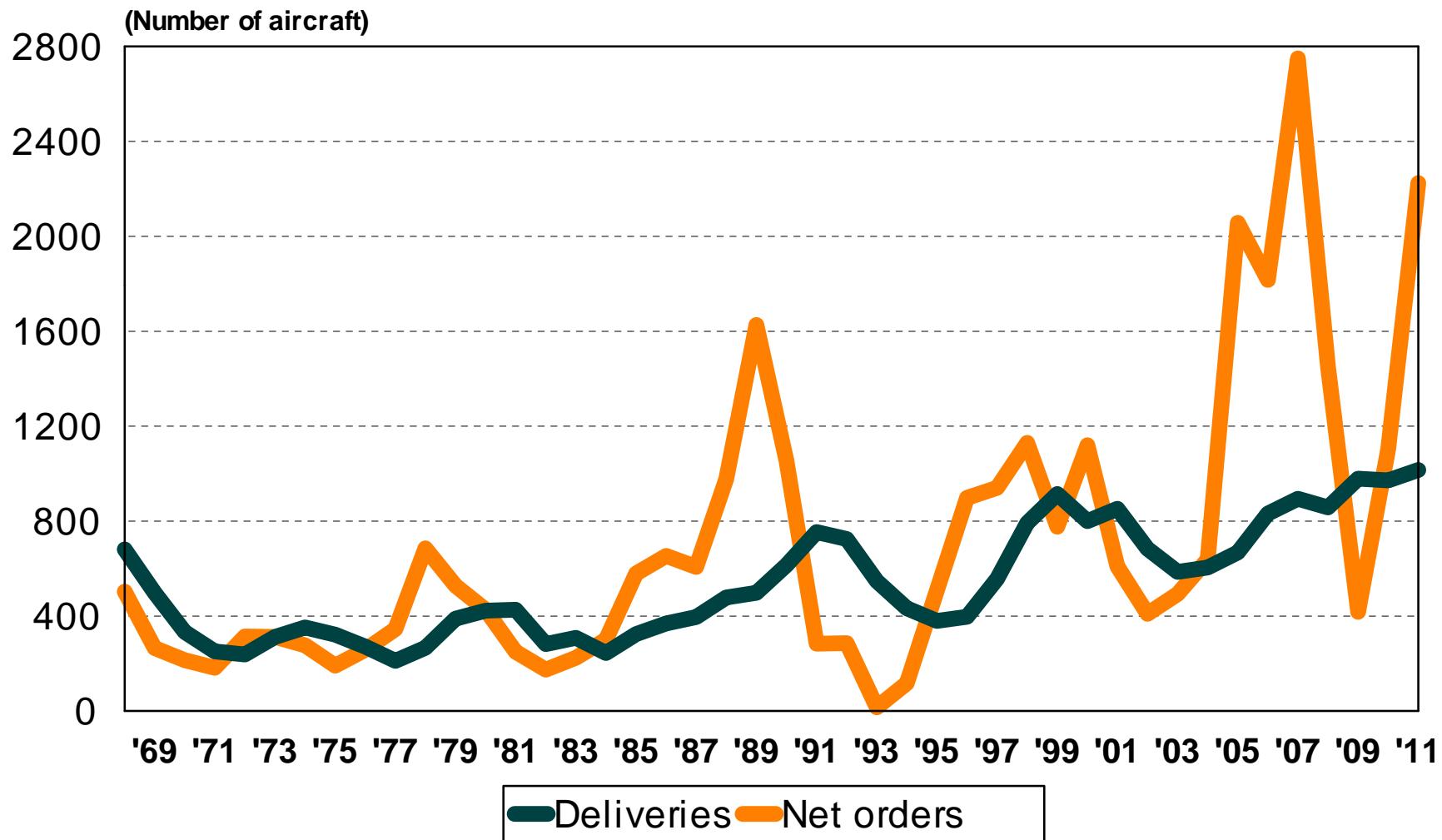
# GDP Year/Year Growth Rates



Source: Morgan Stanley

# Historical Jetliner Orders And Deliveries

Four Great Book-To-Bill Years, Followed By A Cliff Dive;  
Good Recovery, But Driven By Long-Term Orders



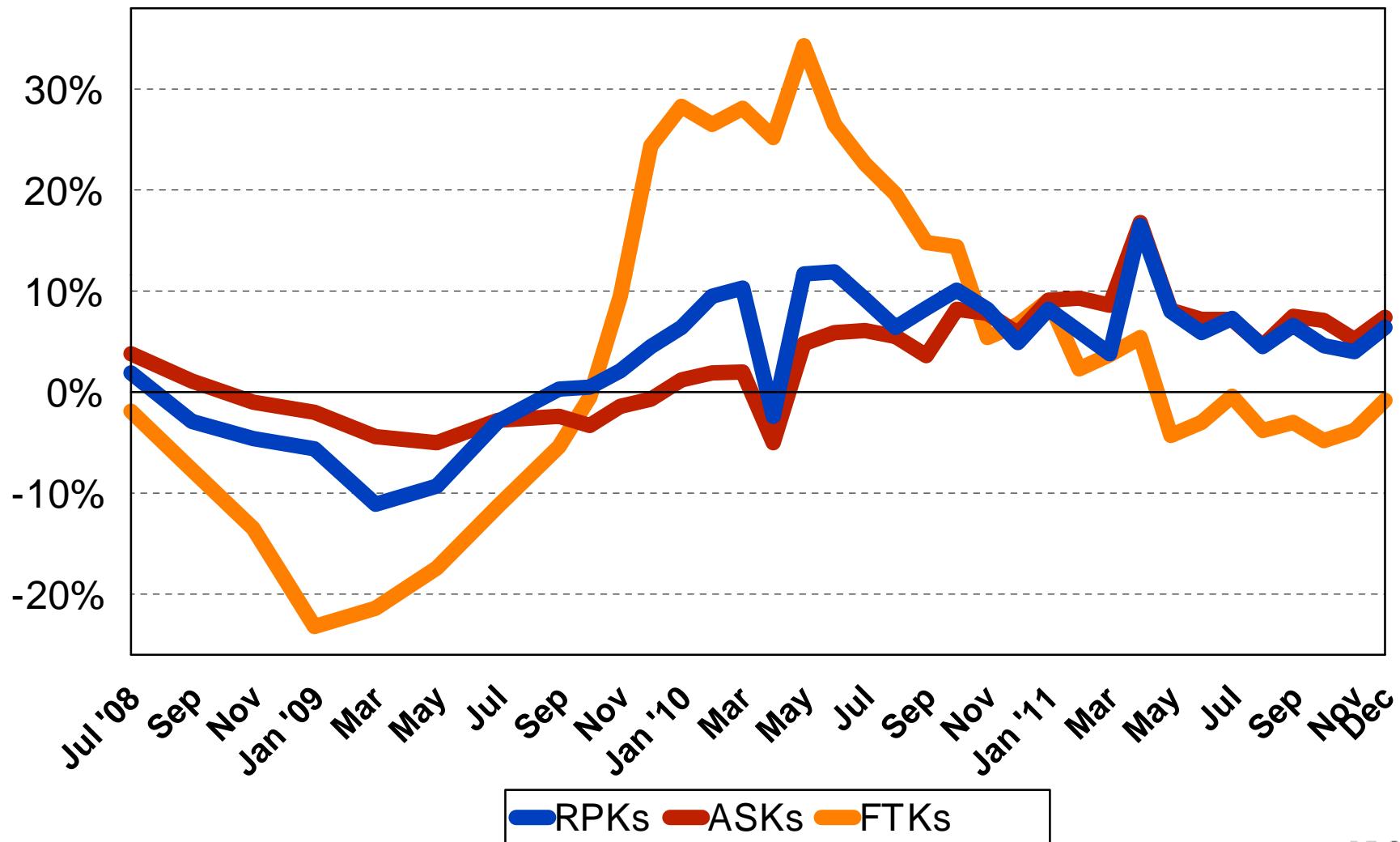
All Airbus and Boeing aircraft

# What's Different With This “Cycle”

- High fuel prices.
- Stronger emerging markets.
- Government export credit finance.
  - From 15% to ~35%.
- Other government support (sovereign funds, government banks and airlines).
- Global flight to safe assets (“excessive demand”?).
- Need to forestall emerging competition?
- The primes really need cash.
  - With declining defense, everyone needs a growth story.

# Y/Y Traffic: Nice Recovery; Cargo A Concern

2011 Totals: RPKs 6.9%, ASKs 8.2%, FTKs -0.6%

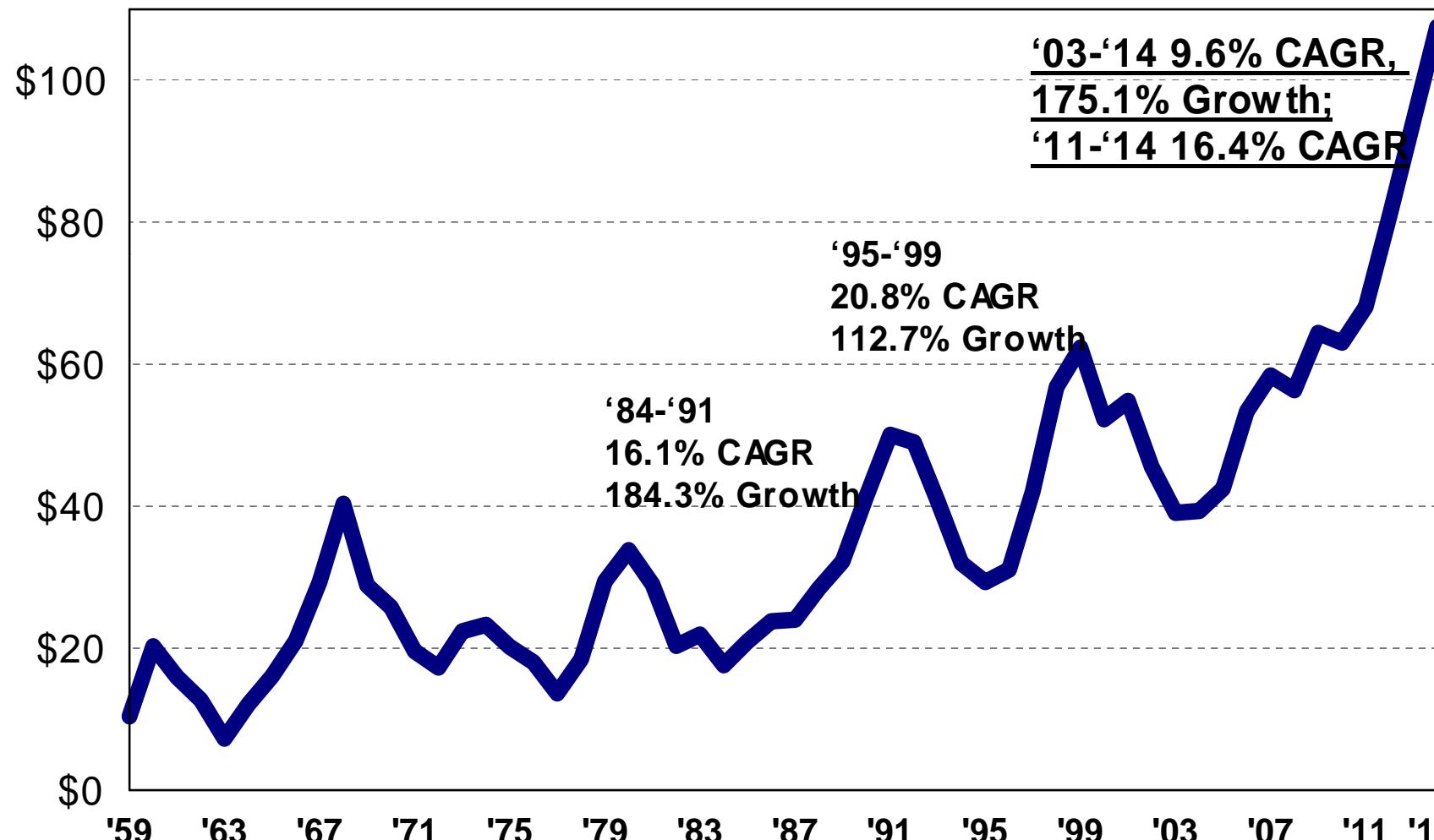


Source: IATA

# Do You Believe In Super Cycles?

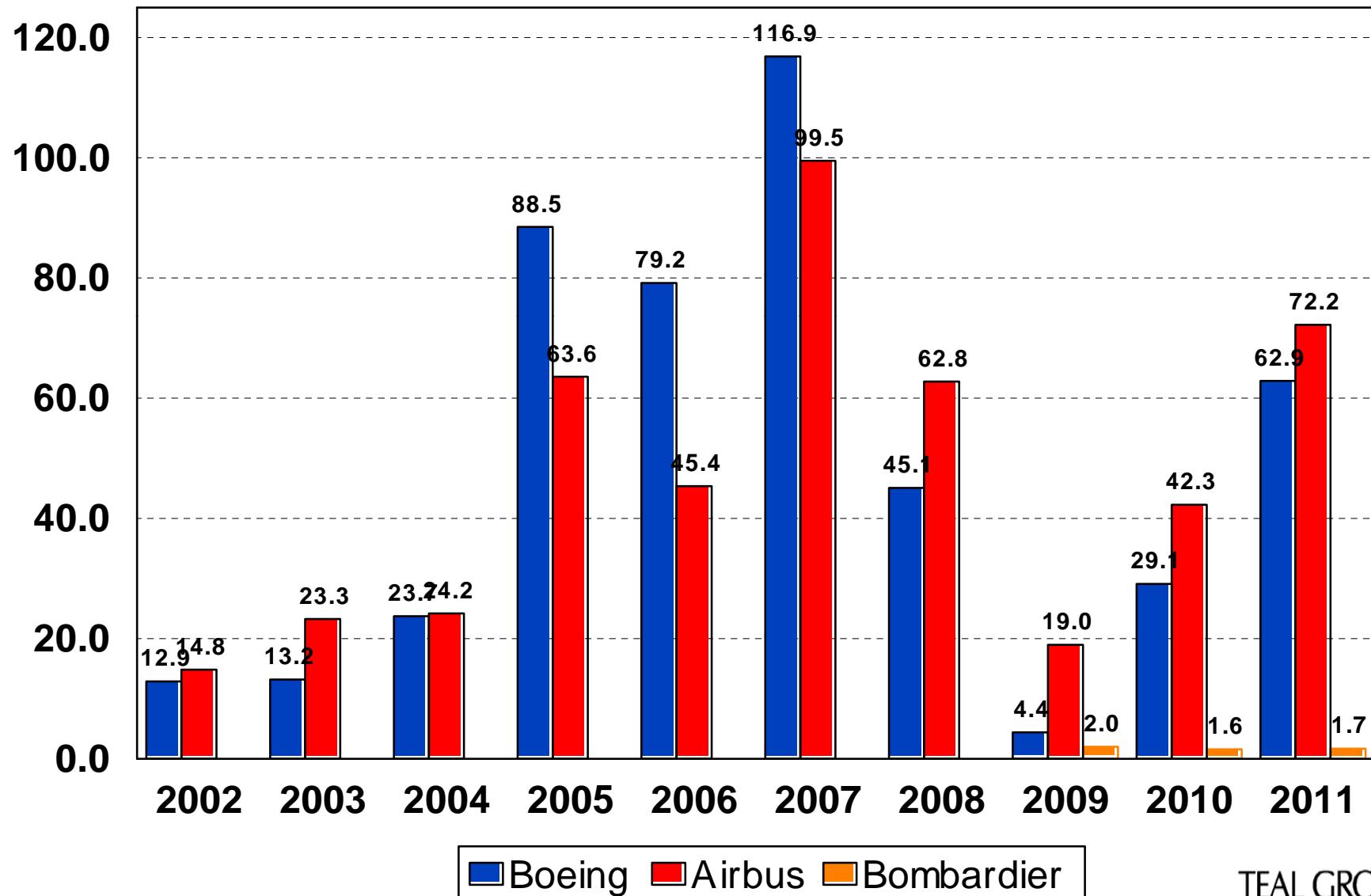
## History And OEM Plans For Large Jet Transport Deliveries By Value

(Value in '12 \$ Bns)

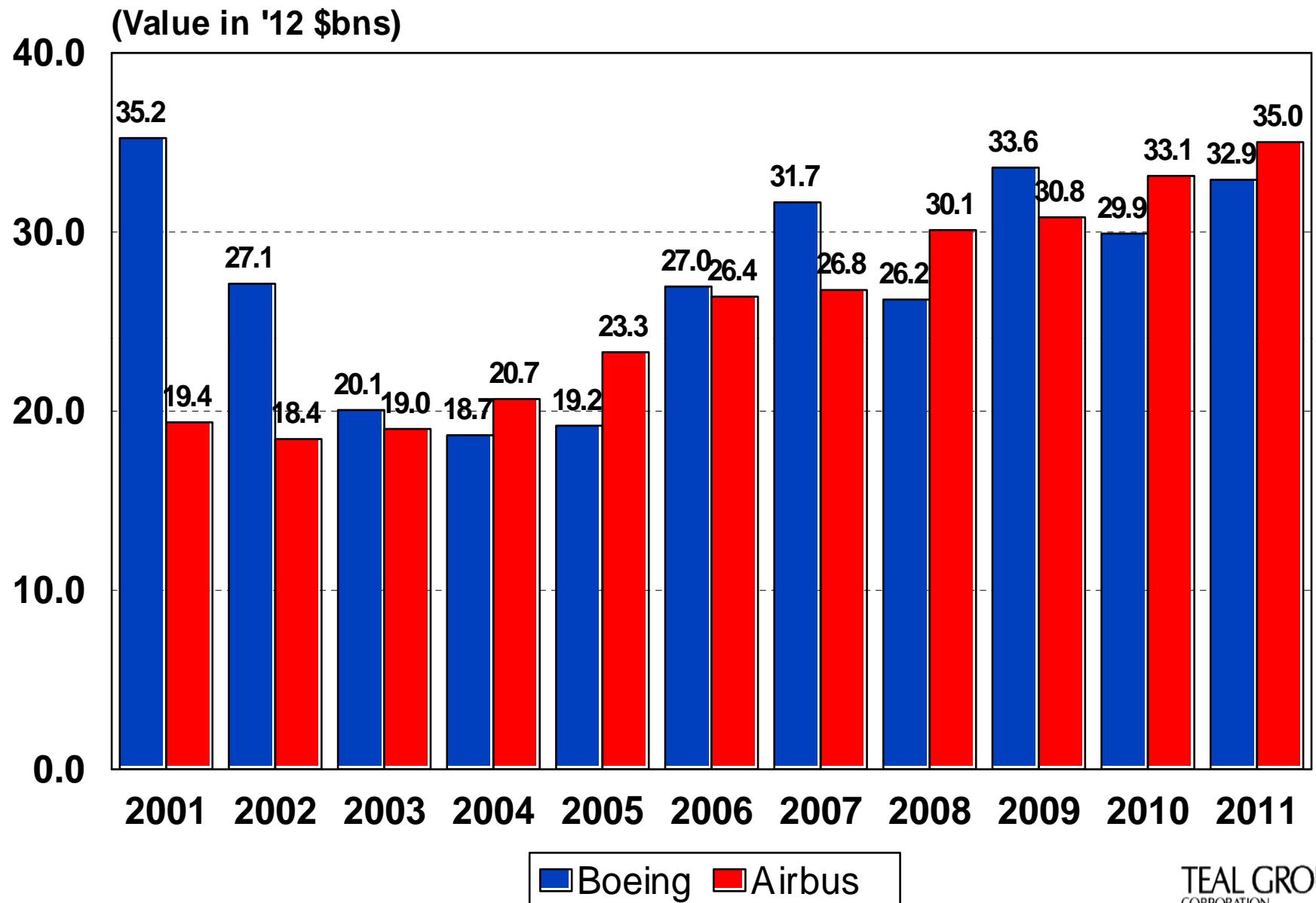


# Comparative Order Values

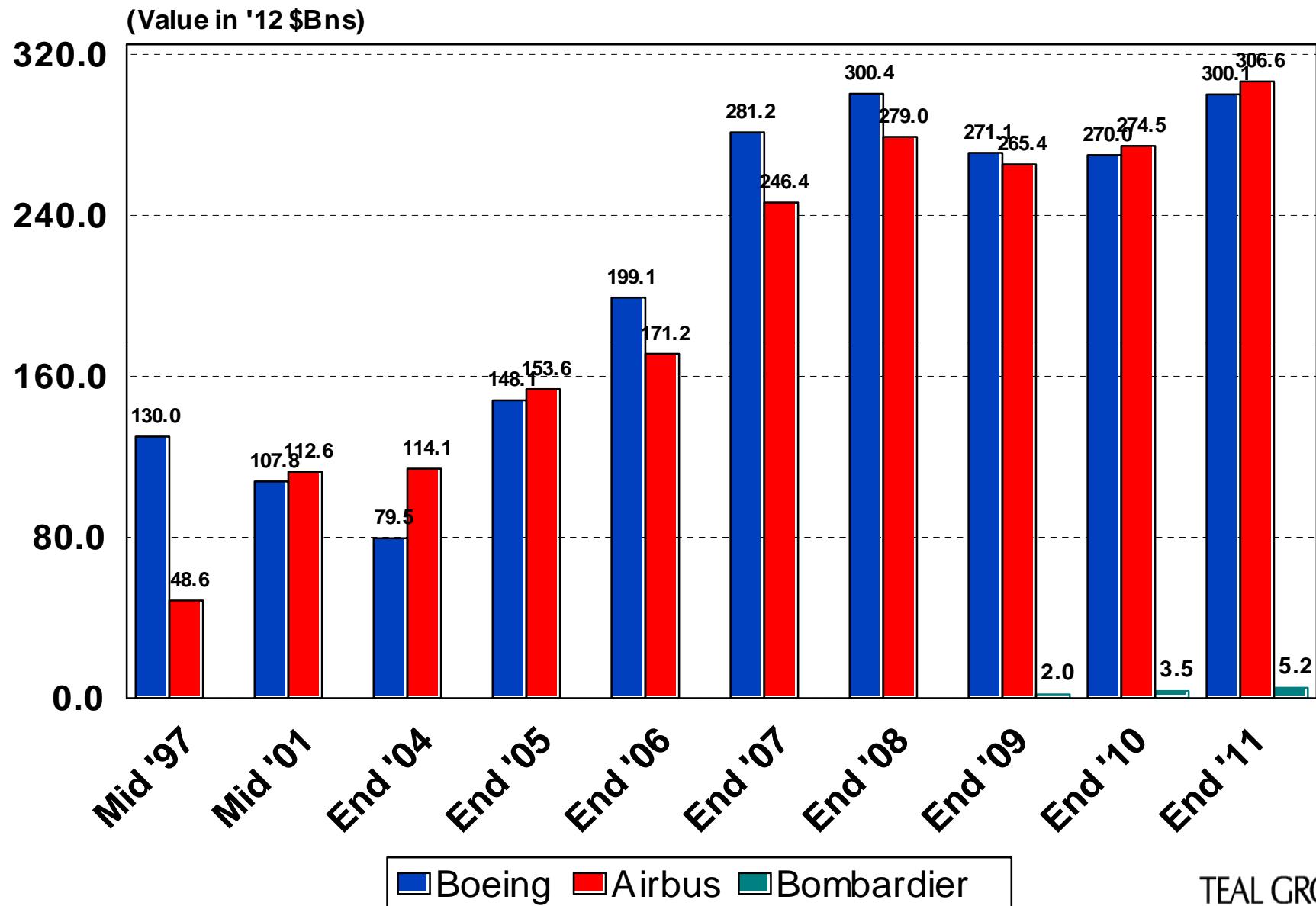
(Value in '12 \$bns)



# Comparative Delivery Values

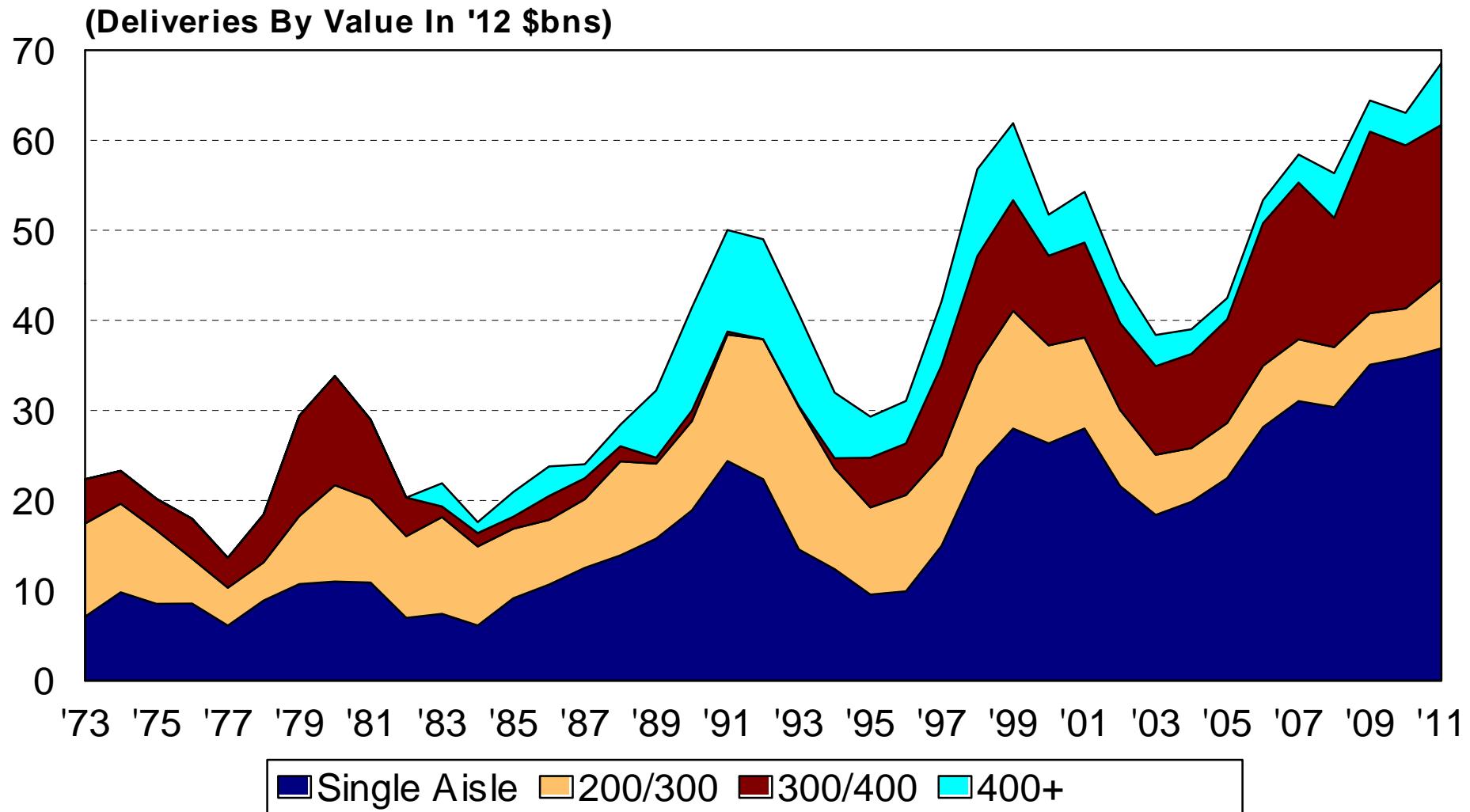


# Comparative Backlog Values



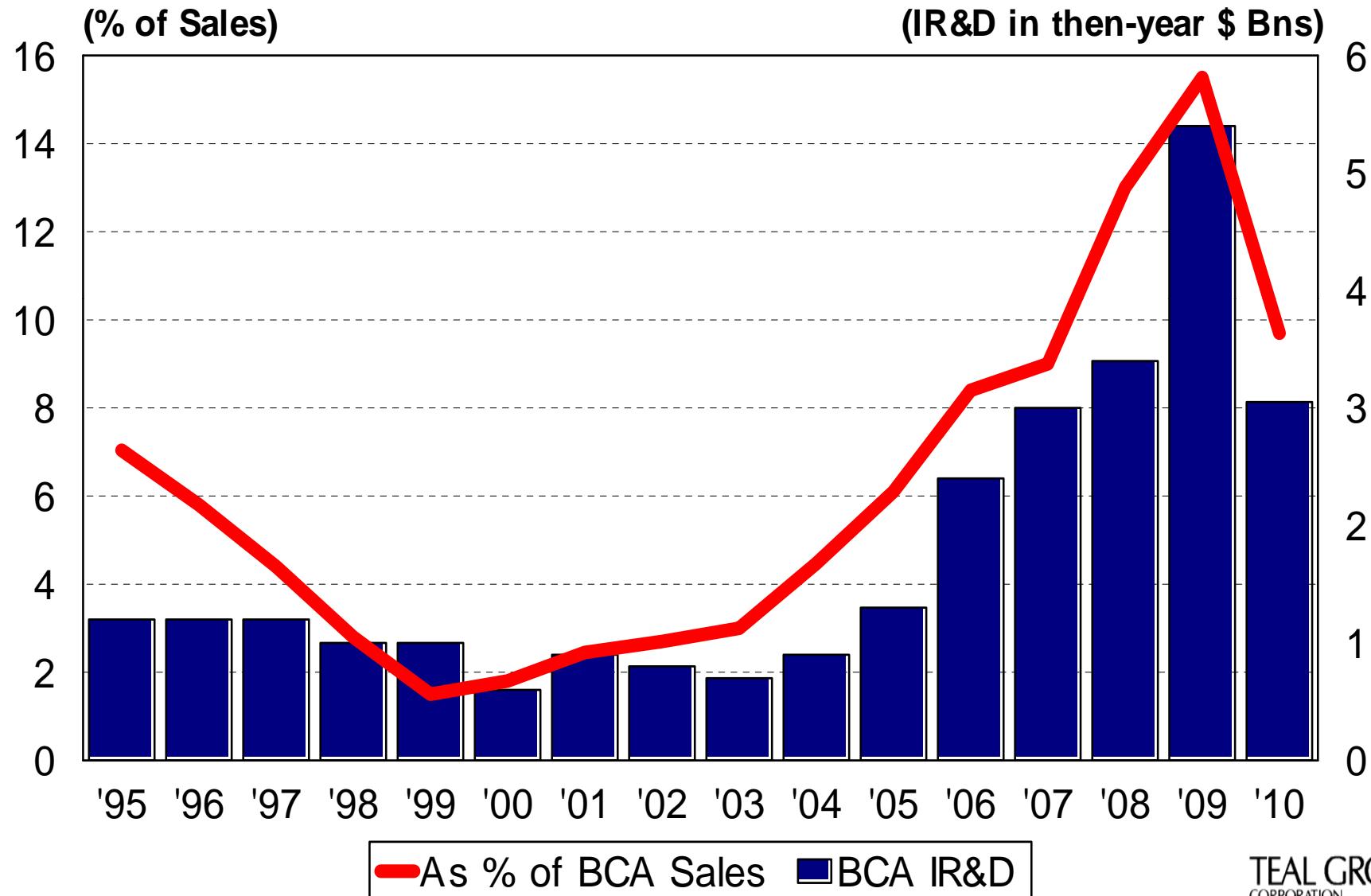
# Jetliner Segment Deliveries

Single Aisles--Two Families--Were 54% Of 2011 Deliveries, 53% Of 2002-2011 Deliveries

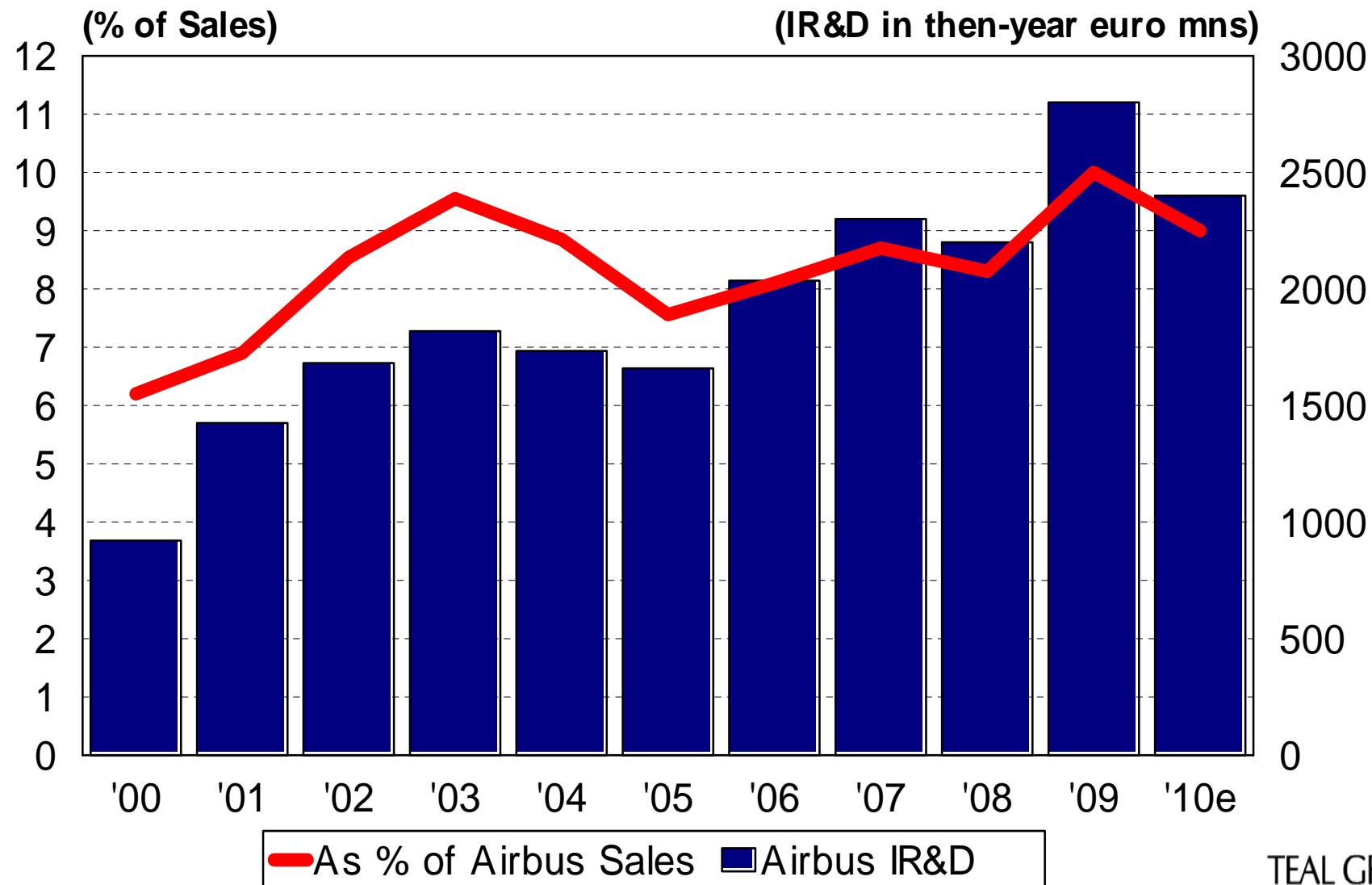


Mainline only

# Boeing Commercial Aircraft IR&D: Hitting New Heights



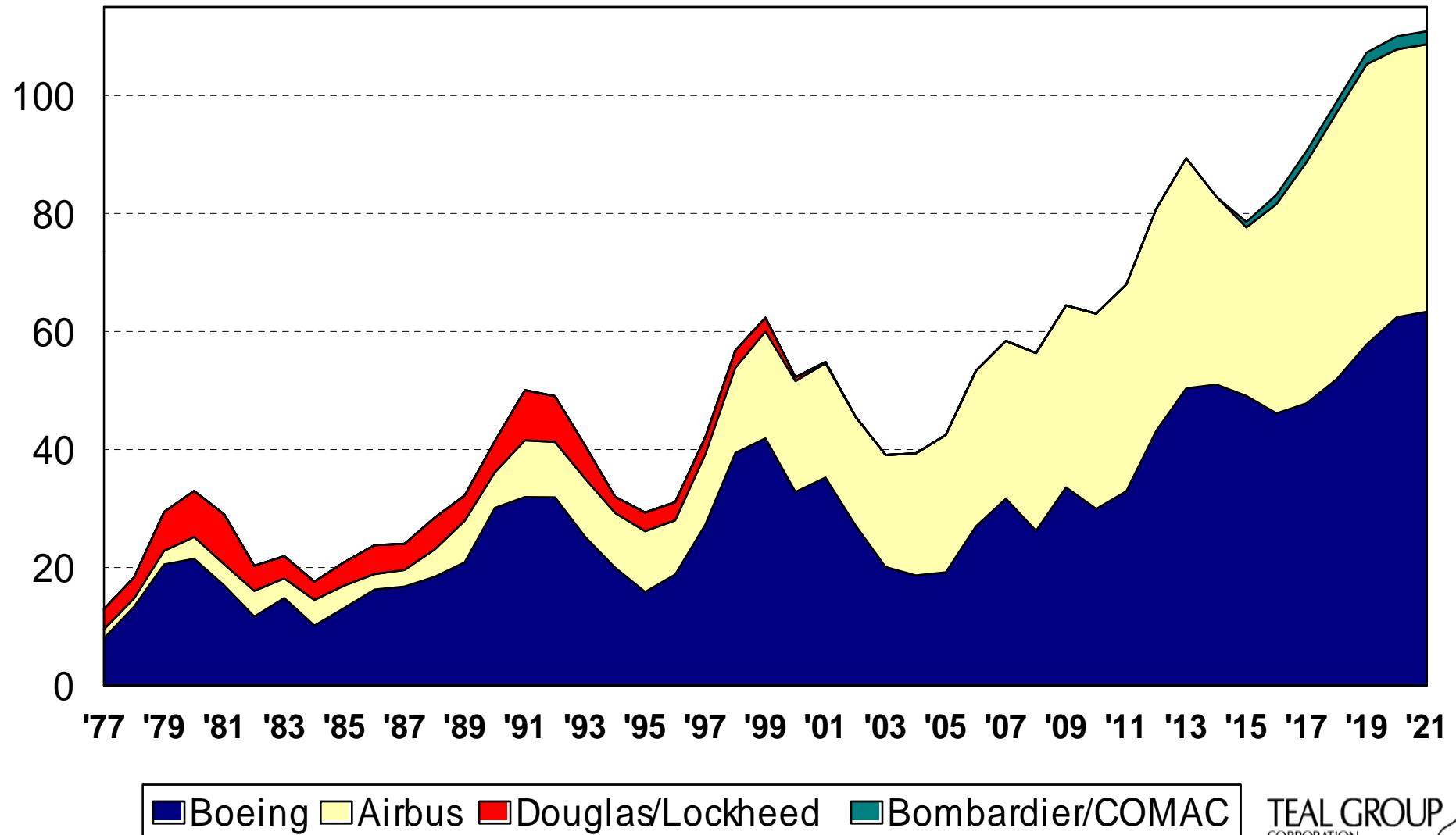
# Airbus Commercial IR&D...Just Getting Started With A350XWB, A320neo



# Market Share Outlook By Deliveries Value

Assumes A350 XWB EIS 2Q2015

(Value in '12 \$Bns)



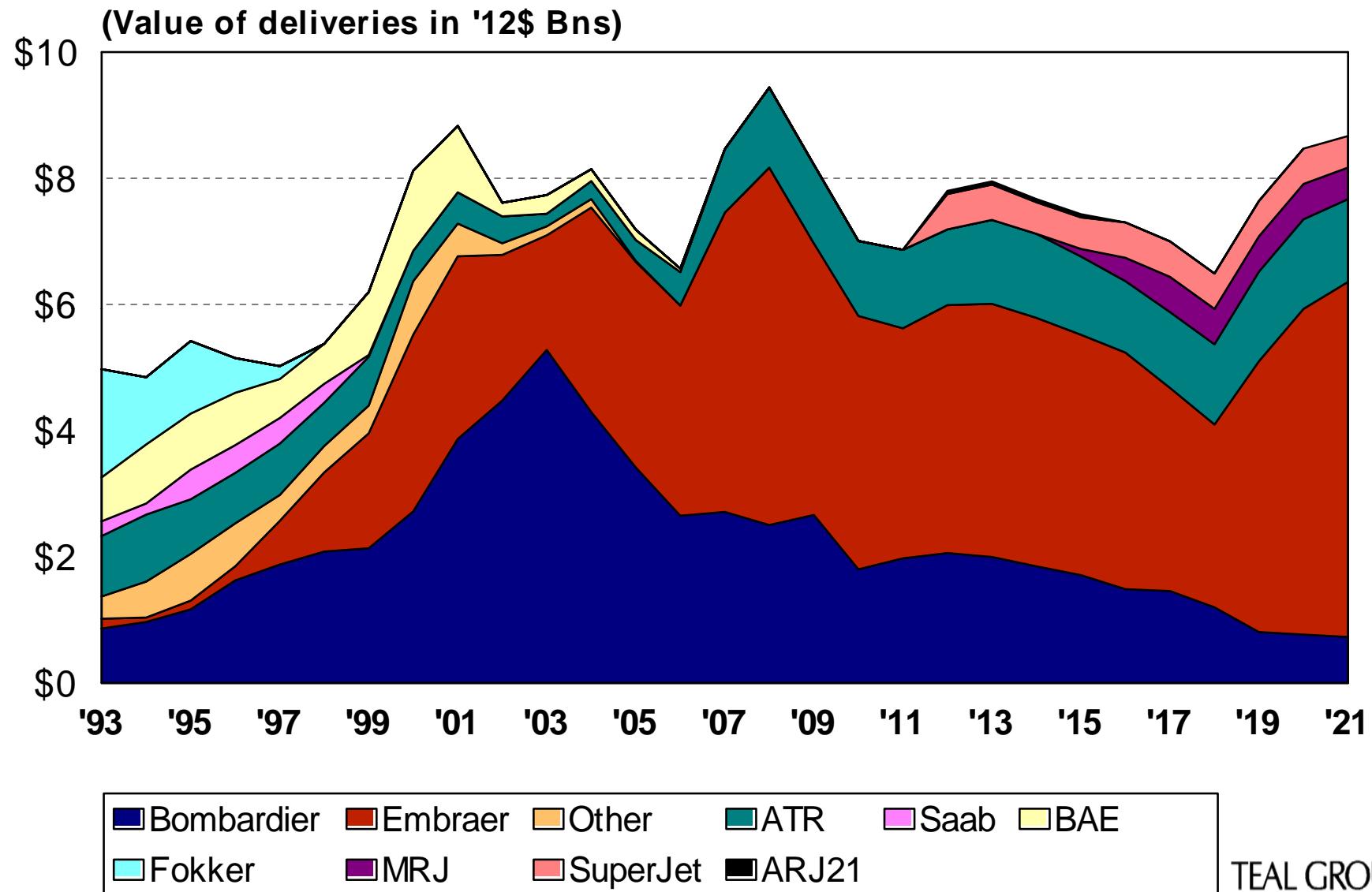
■ Boeing ■ Airbus ■ Douglas/Lockheed ■ Bombardier/COMAC

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# US Jetliner Industrial Policy Today

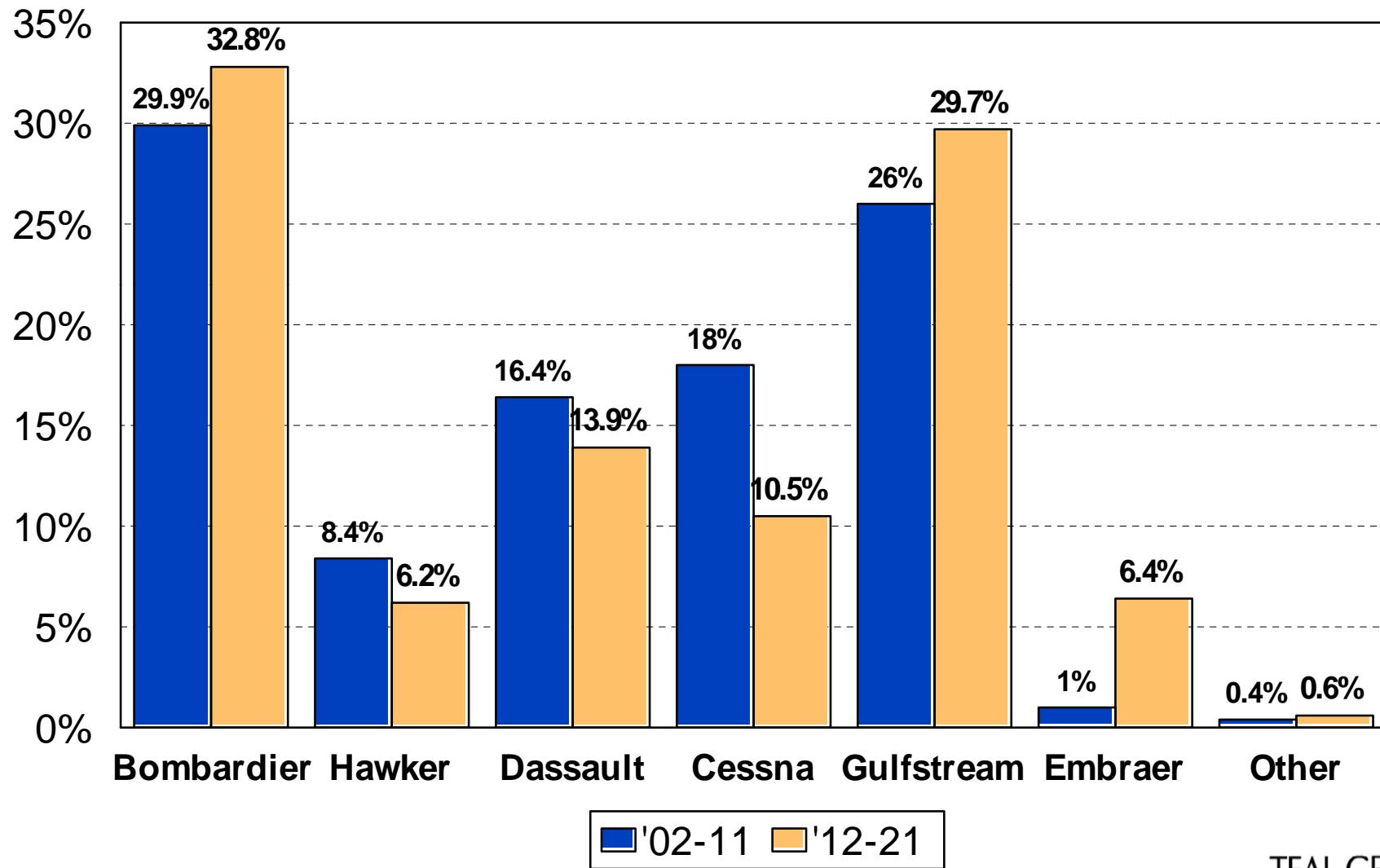
- The former approach: no direct aid, but some cash for advanced, high-risk R&D.
- The new approach: lots of direct aid, less cash for advanced R&D.
- Manifestation: Ex-im bank jetliner transaction funding, now augmented by supplier aid program.
  - Transaction funding goal is level playing field. That's valid, but nobody seems to want to disarm.

# Regional Market Entrances Possible; Exits More Common



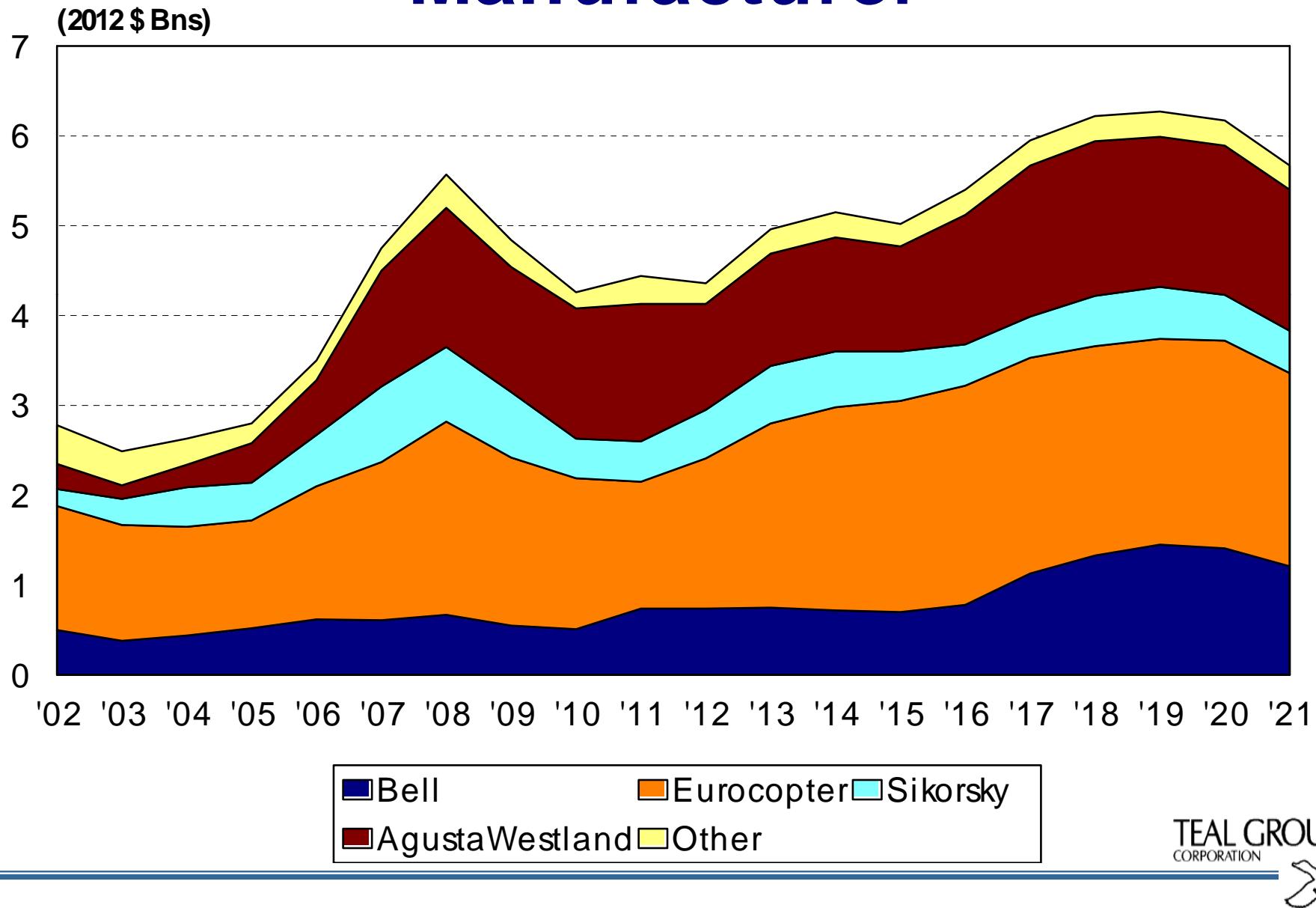
# Business Jet Manufacturer Market Shares

By Deliveries Value, 2012-2021 Vs 2002-2011

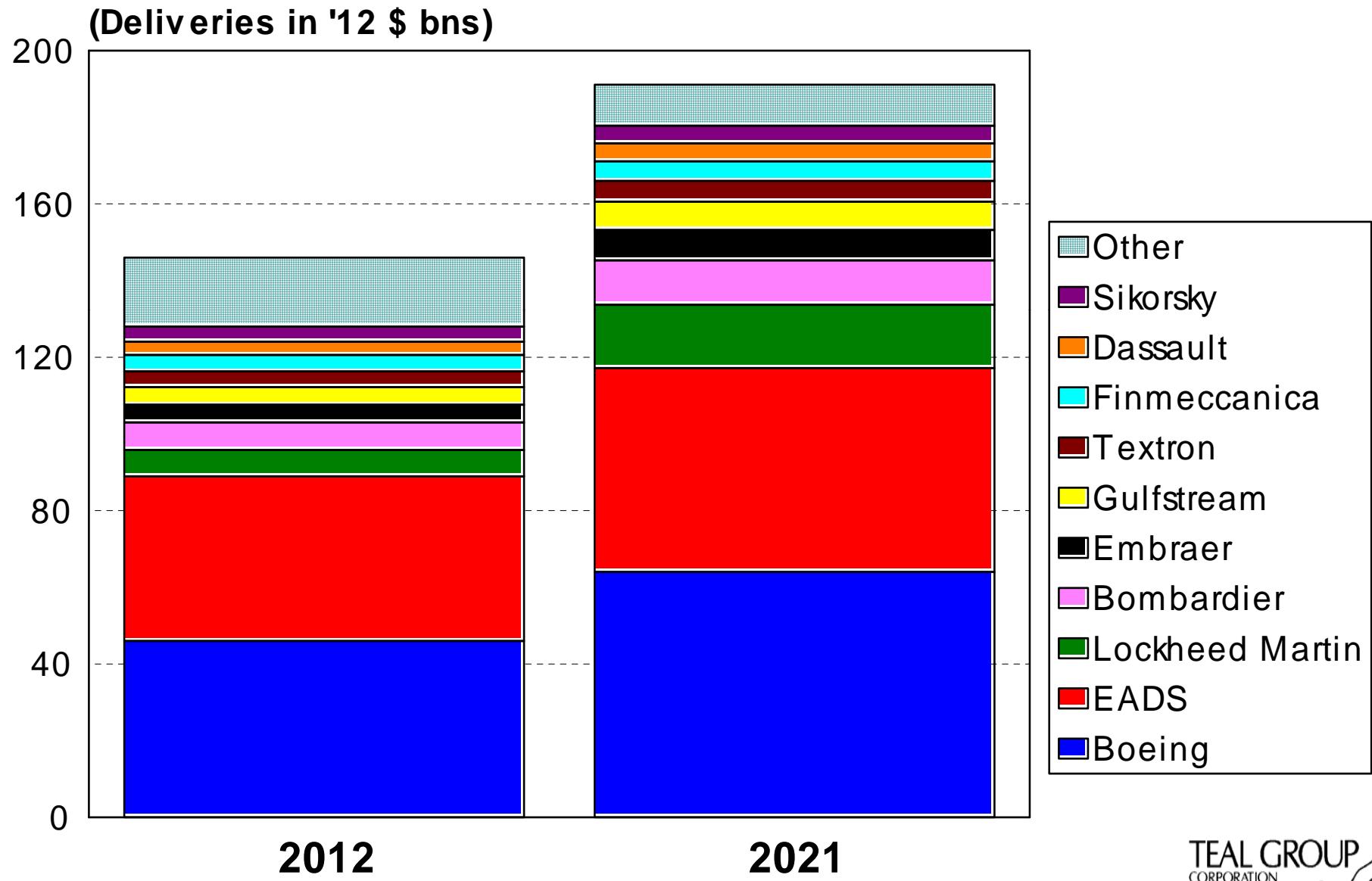


Excludes jetliners, RJs, turboprops

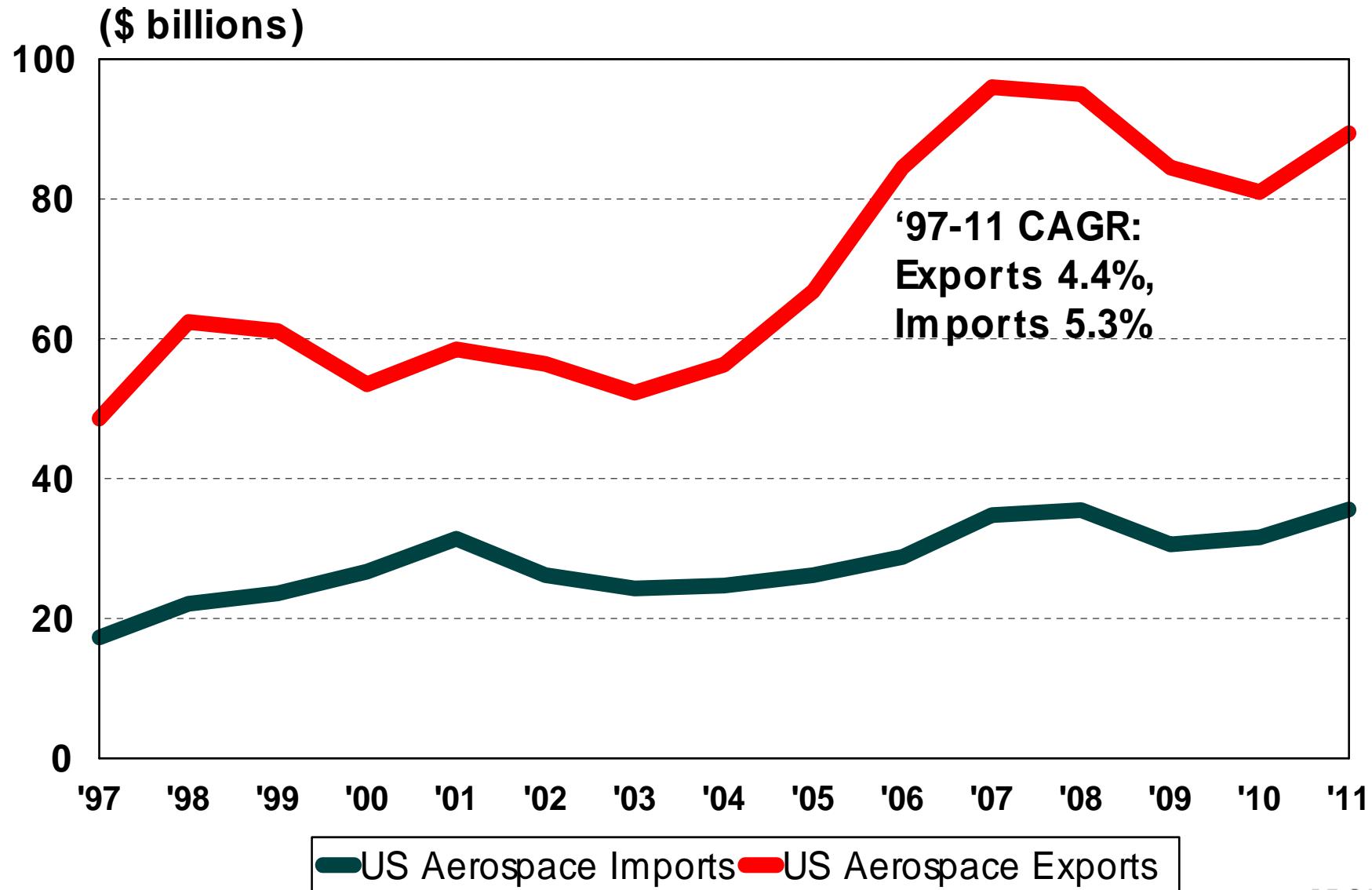
# Civil Helicopter Deliveries By Manufacturer



# The Big Aircraft Builders



# Aerospace Trade: Strong US Surplus

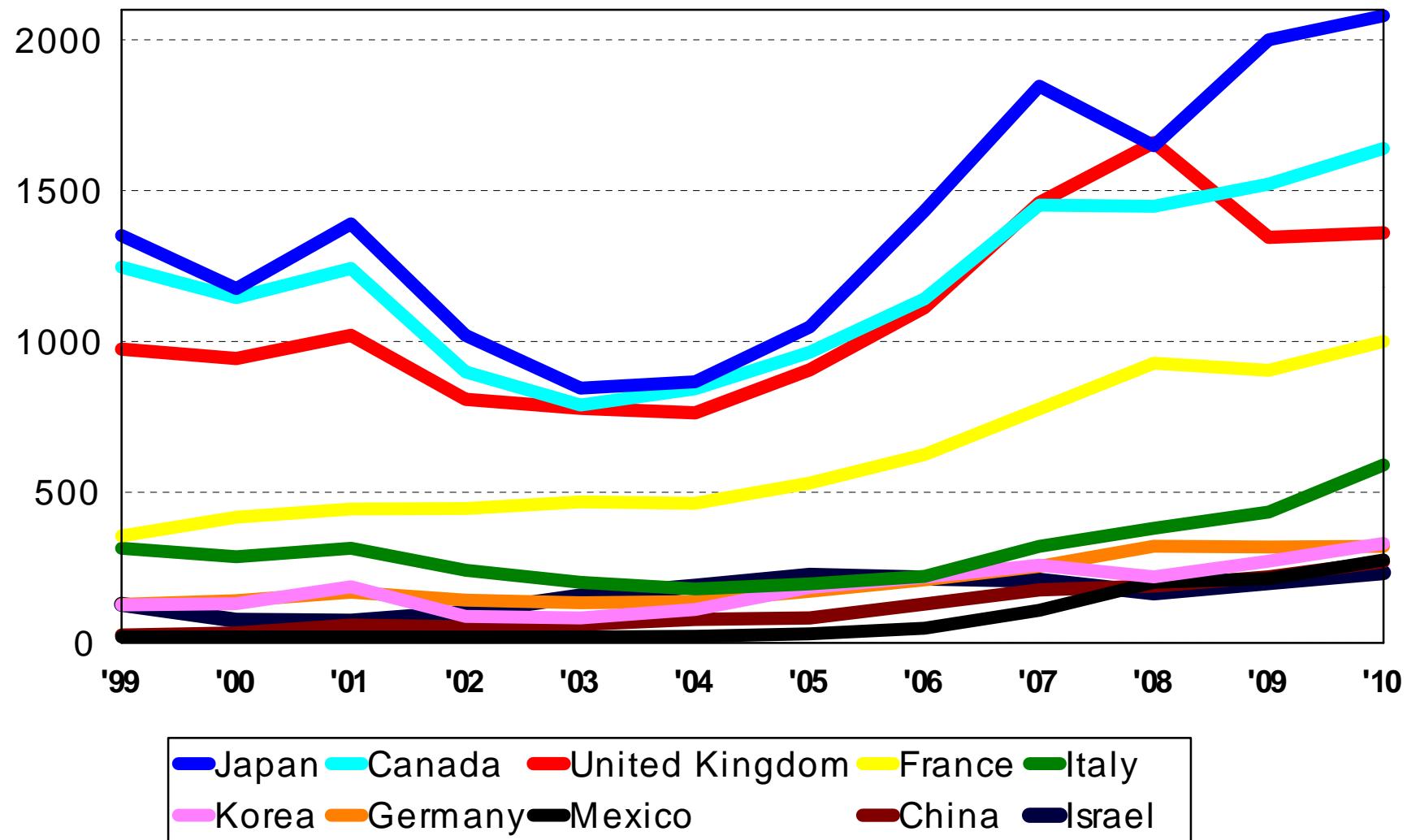


Source: US ITC

# US Aircraft Industry: Global Sources

## Aircraft Parts Imports To US By Origin

(Value in Then-Year \$ Mns)



Source: ITC NAIC 336413; top 10 countries (in order, as of 2010)

# Growth Rates By Supplier Nation

<u>Source (To US); Excludes Engine Primes (UK, France, Canada); Largest to Smallest</u>	<u>Engines/Parts '00-'10</u>	<u>AC Parts '00-'10</u>
Germany	2.7%	8.5%
Japan	9.7%	5.8%
Mexico	23.7%	17.1%
Italy	14.1%	7.4%
Israel	10.4%	12.1%
Poland	38.5%	27.2%
China	22.0%	23.3%
Singapore	18.5%	5.9%
Sweden	4.5%	11.5%
Belgium	8.4%	10.0%
Korea	8.2%	10.0%
<b>Total US Imports</b>	<b>3.7%</b>	<b>8.5%</b>

# Supplier Dynamics

- China, Mexico growth strong (from low base); otherwise all high skill/high wage countries.
- If anything, balance shifting back towards high skill/high wage countries.
  - Skilled wage inflation in developing economies.
  - Higher freight costs.
  - Trend towards advanced materials.
  - Greater manufacturing automation/capital intensiveness.
  - But, OEMs increasingly able to disaggregate manufacturing.
- WTO-ATCA remarkably effective ([http://www.wto.org/english/docs\\_e/legal\\_e/air-79.pdf](http://www.wto.org/english/docs_e/legal_e/air-79.pdf) ).
  - But greater military export importance means more civil offset work for military contracts.