

Stabilization, And That's About It For Now

Teal Group 20th Annual Business Aircraft Market Forecast And Industry Overview

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Last Year Teal Said:

- 9,300 bizjets worth \$153.7 bn ('09\$) '09-'18.
- This is a transformed industry. But we're headed into a very difficult bust cycle. This will take about three years.
- Big Five. Plus +1+0.5. Maybe + another 0.5.

This Year Teal Says:

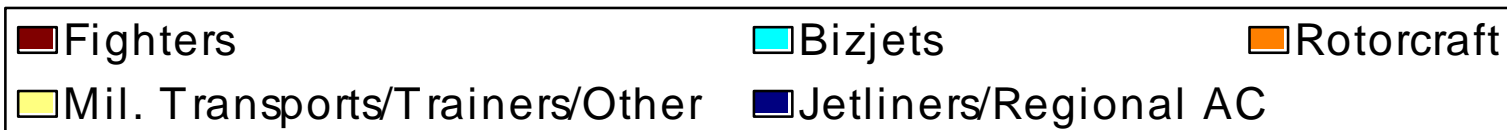
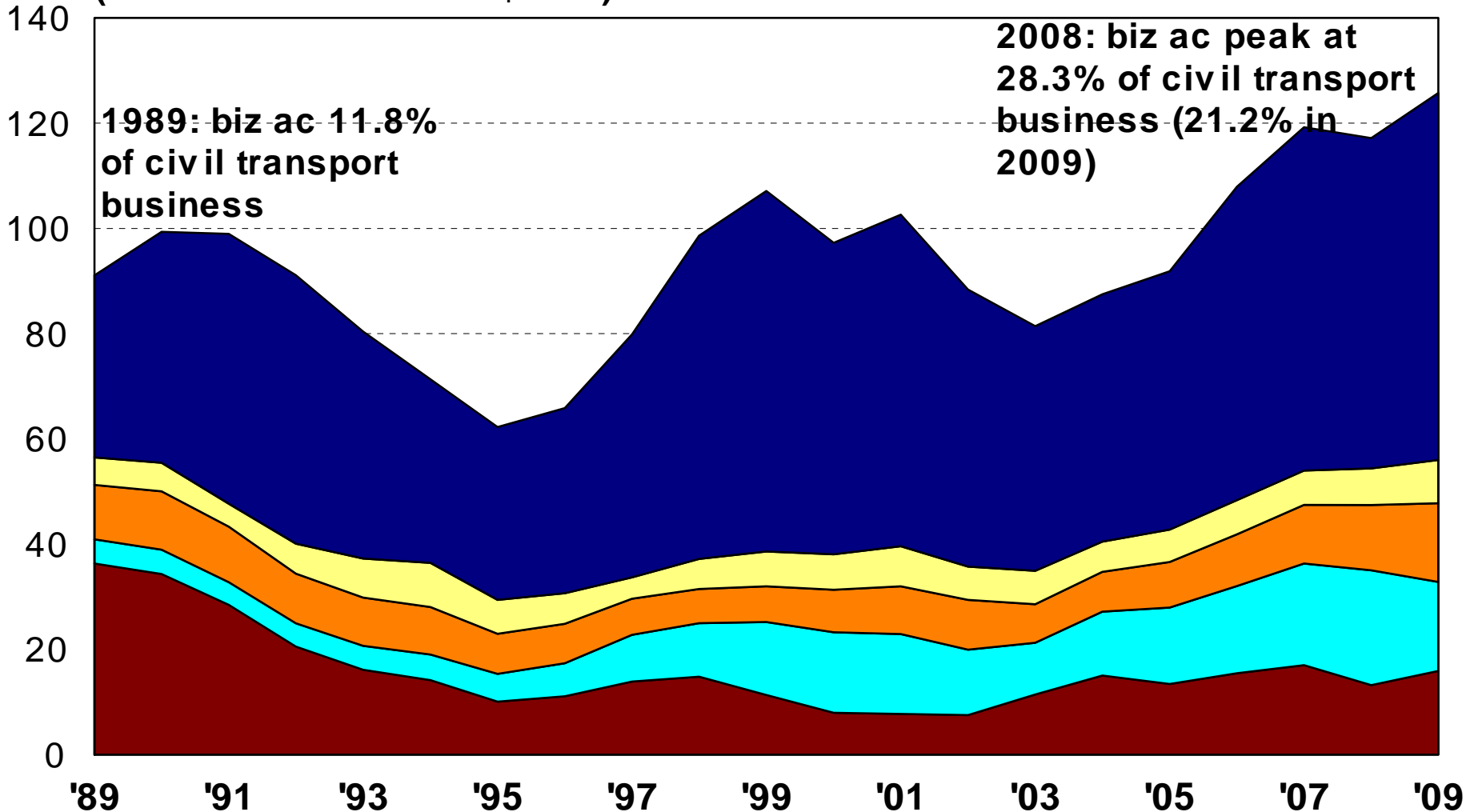
- 10,285 bizjets worth \$184.1 bn ('10\$) '10-'19.
- We're halfway through a very difficult bust cycle. This will take about three years.
- Top half/bottom half market bifurcation is unprecedented.
- Big Five. Plus +1+0.5. That's it.

After Heading Down For The First Time In Over A Decade, We're Back Up Again!

Where We've Been; Where We Are

Aviation Markets: The Past 20 Years

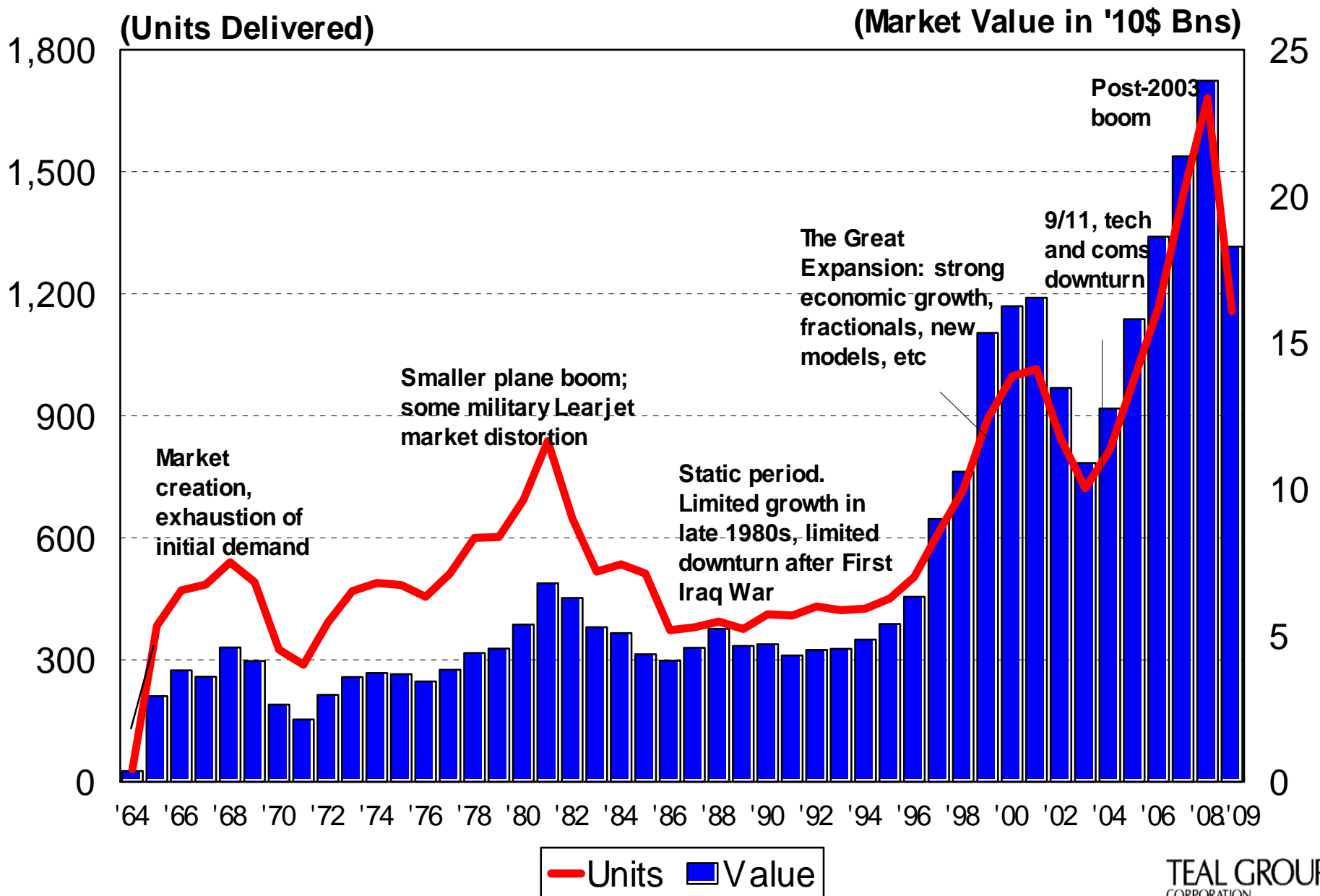
(Market Value in 2010 \$ Bns)



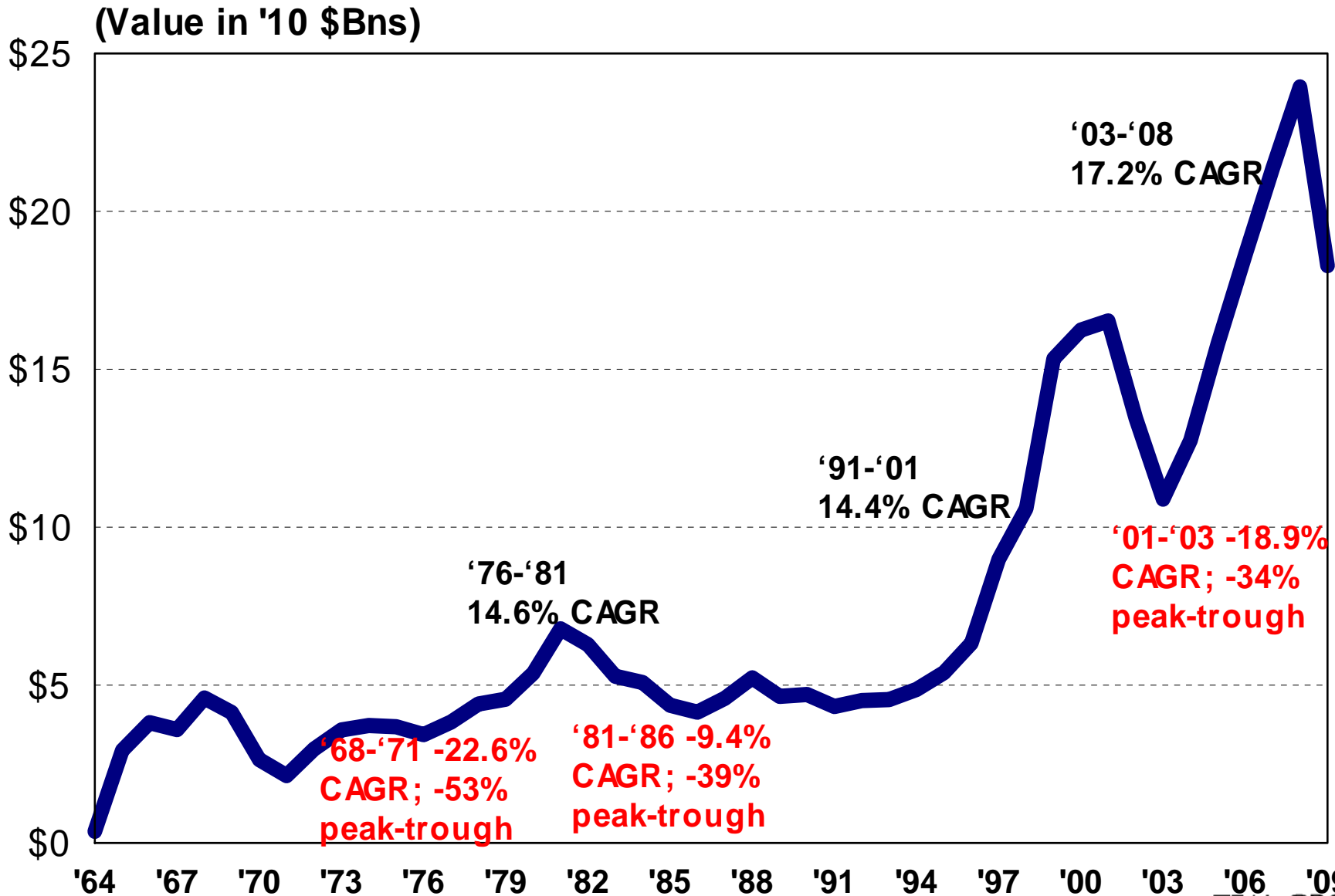
The Great Boom, And A Curious Grace Period (But Not For Business Aircraft)

<u>Market</u>	<u>CAGR '03-'08</u>	<u>CAGR '03-'09</u>	<u>'08-'09</u>
Large Jetliners	7.0%	8.0%	13.5%
Business Aircraft	17.2%	9.0%	-24.3%
Regionals	1.4%	0.2%	-5.7%
Civil Rotorcraft	16.5%	13.5%	-12.5%
Military Rotorcraft	8.5%	12.3%	32.0%
Fighters	2.9%	5.7%	20.5%
Military Transports	3.1%	5.0%	15.5%
Total	7.5%	7.5%	7.0%

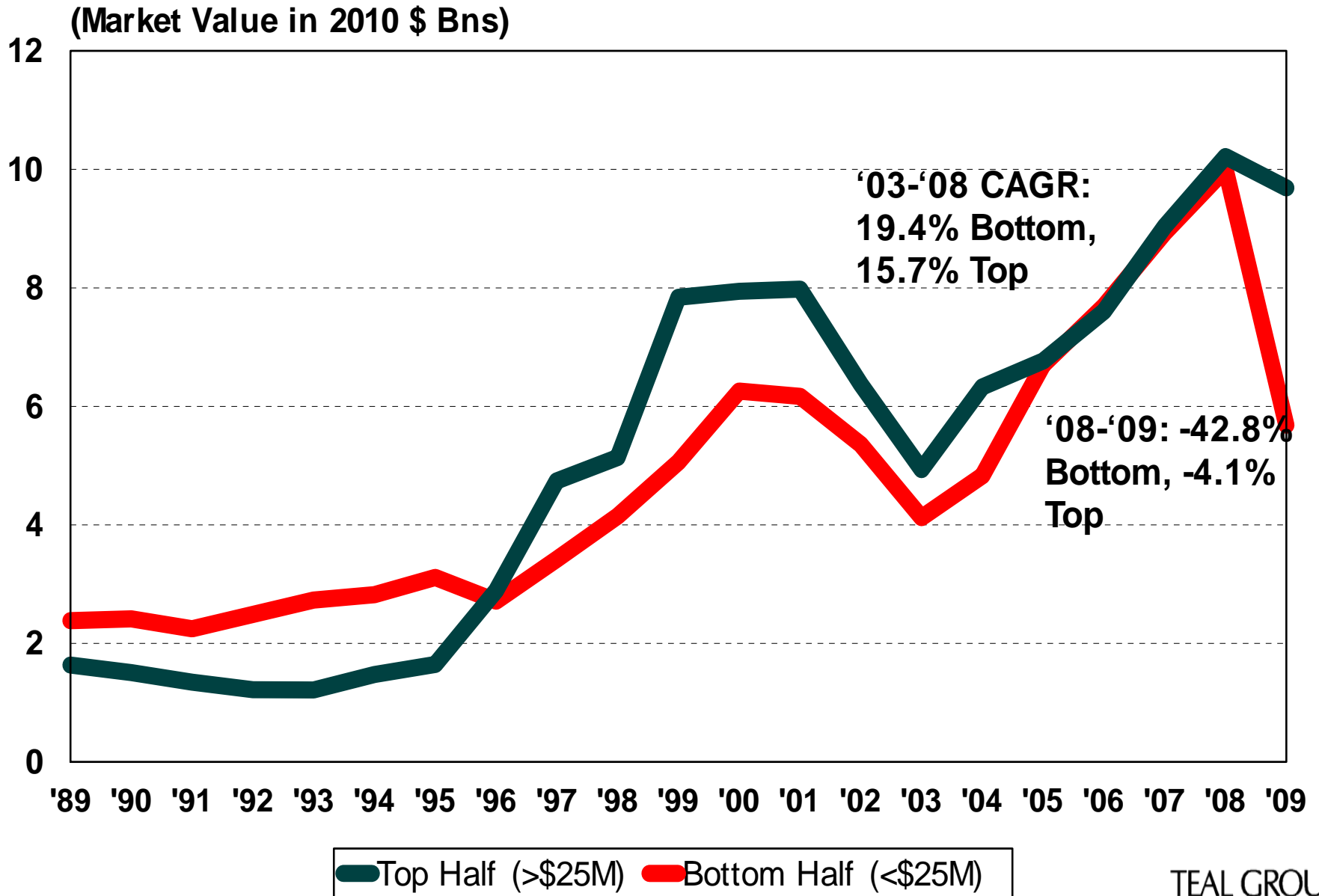
Business Aircraft History (W/Jetliners+RJs+Turboprops)



Business Aircraft Deliveries By Value



Bottom Half Market Segments V. Top Half



Market Bifurcation: Reasons Why

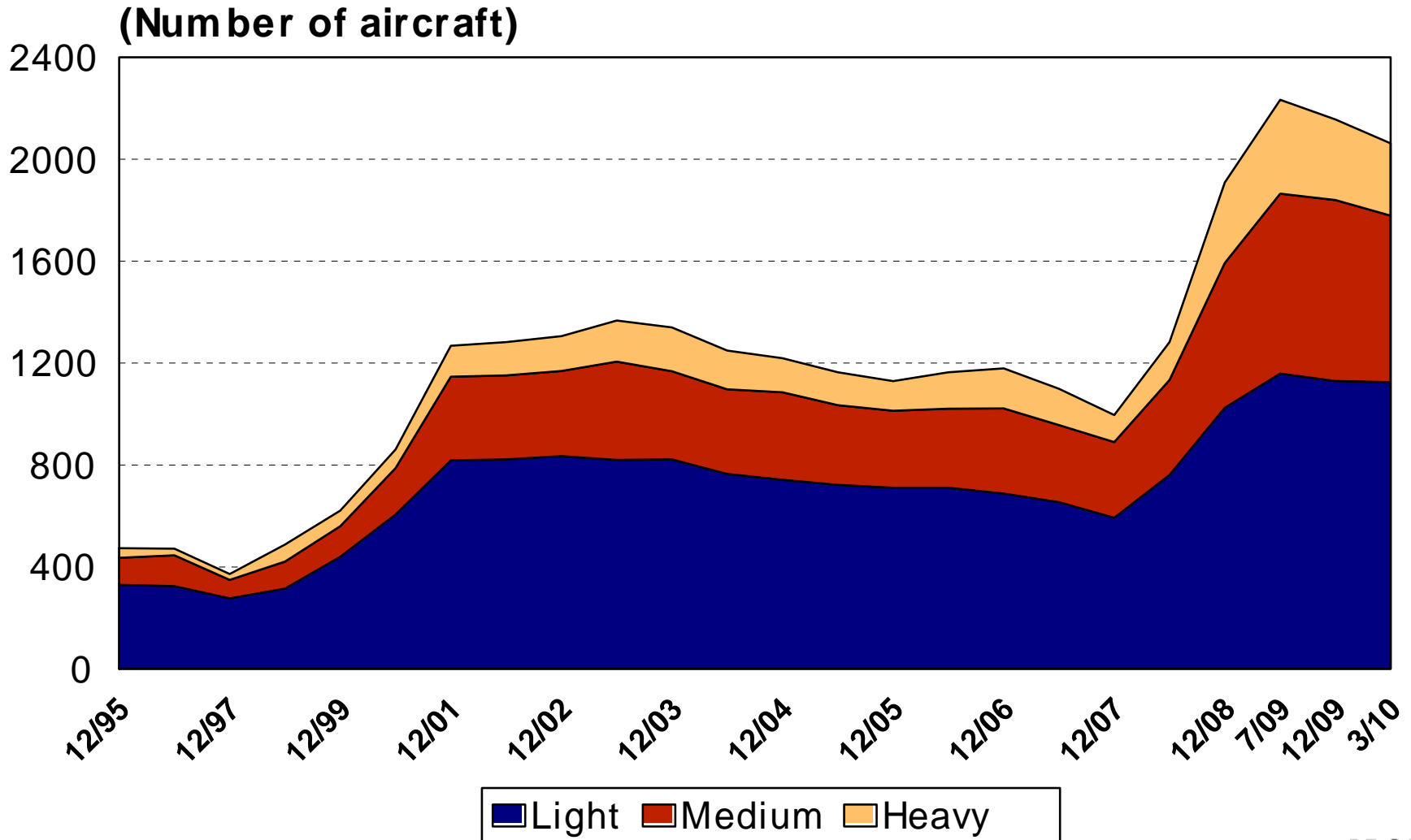
- **Bottom half defined: business jets costing <\$24 mn (VLJs through Class 3).**
- **A sharp cut-off point, with little variation within the top and bottom halves.**
- **This bifurcation could be due to:**
 - **Greater bottom half customer sensitivity to economic cycles.**
 - **More discretionary users in bottom half.**
 - **Bottom half greater 3rd party finance reliance.**
 - **Bottom half greater fractional exposure.**
 - **Top half greater exposure to emerging markets that have stayed intact (Mideast, Asia); bottom half greater exposure to North America.**

Bifurcation: Reasons Why (2)

- Top half greater exposure to government demand, particularly head-of-state aircraft.
- A matter of timing (lead times, finance, etc)?
- **Less bifurcation in utilization.**
 - 2009: short range -19%, medium range -20%, long range -15%.
- **One large question: Do both halves recover at the same pace?**

Used Jet Availability

Aftershocks Of An Economic Heart Attack

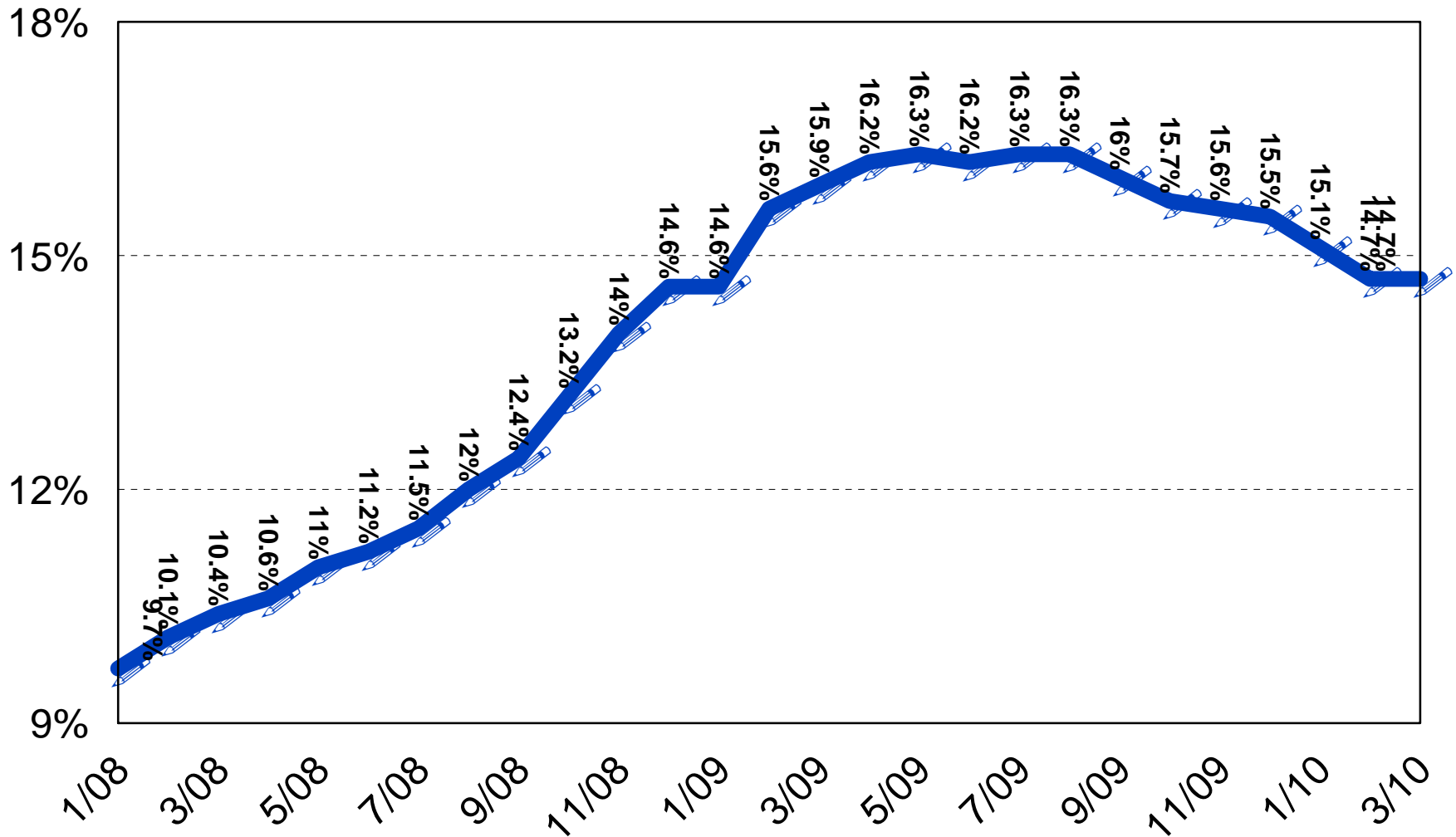


Source: AMSTAT

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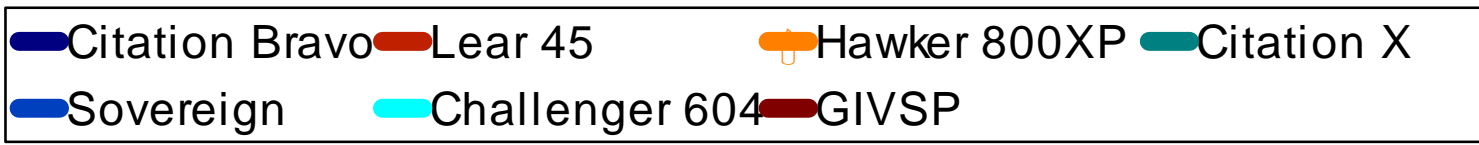
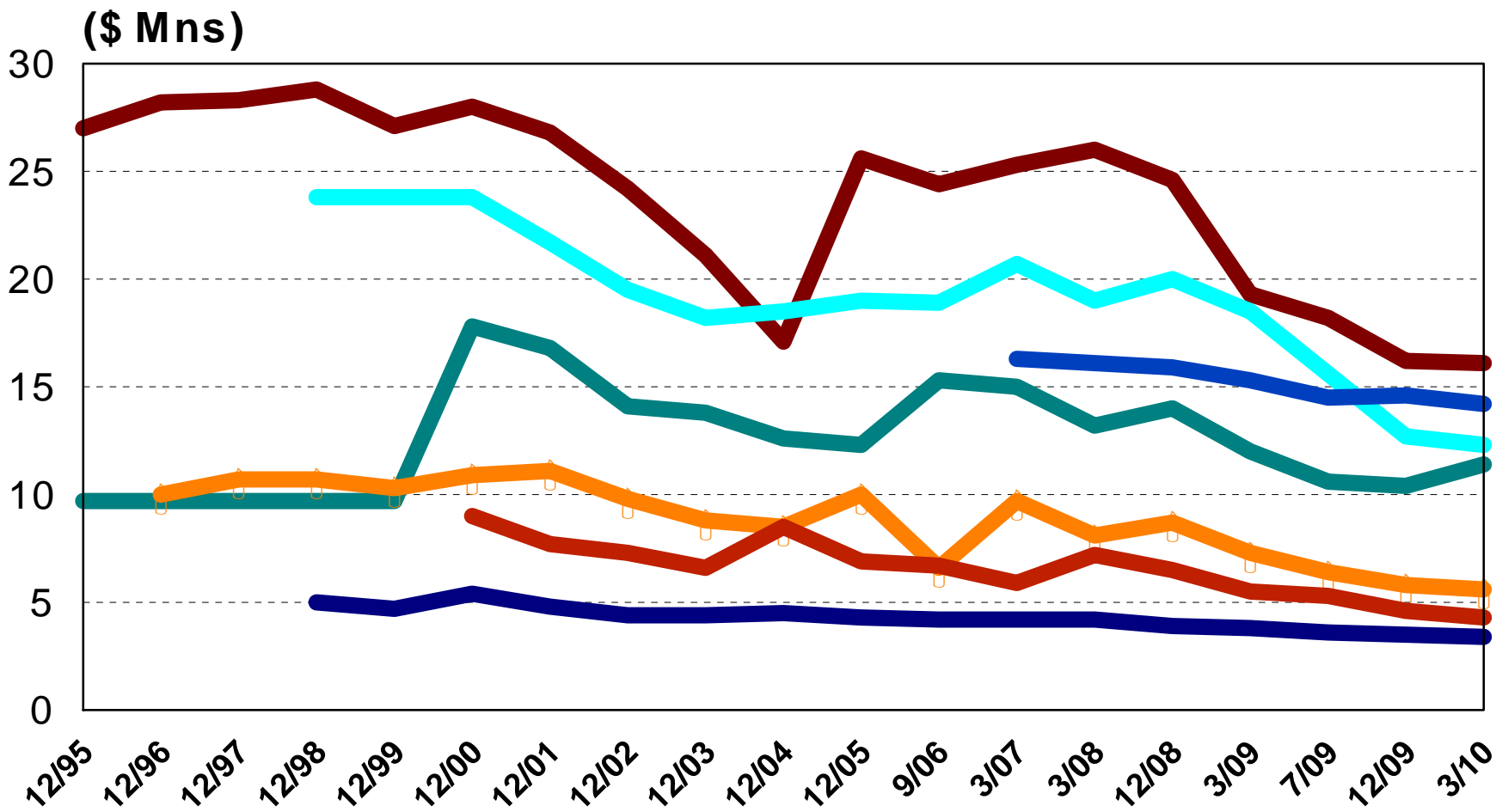
Business Jets For Sale As % Of Total Fleet



Source: AMSTAT



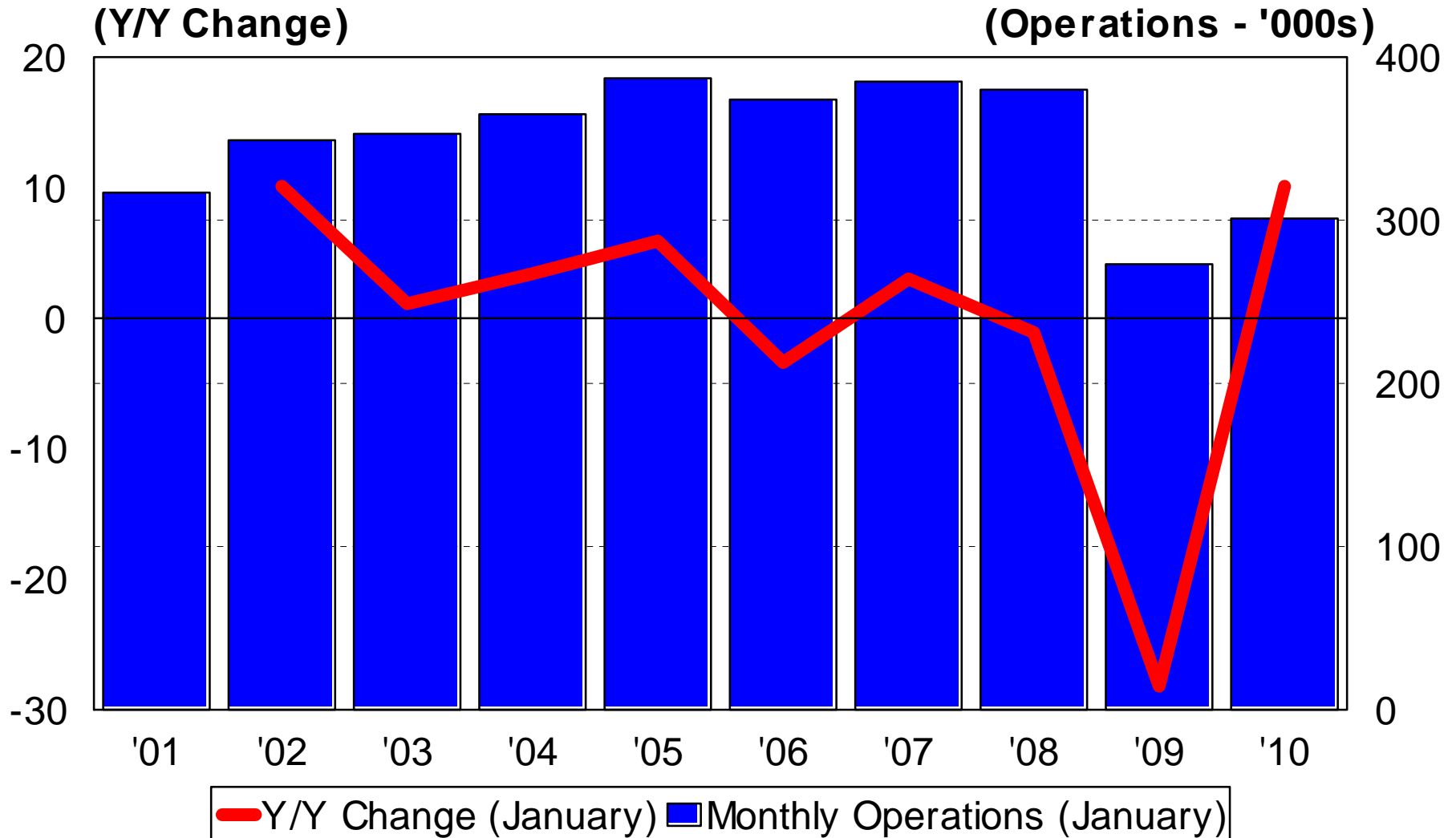
Used Jet Average Selling Prices



Source: AMSTAT

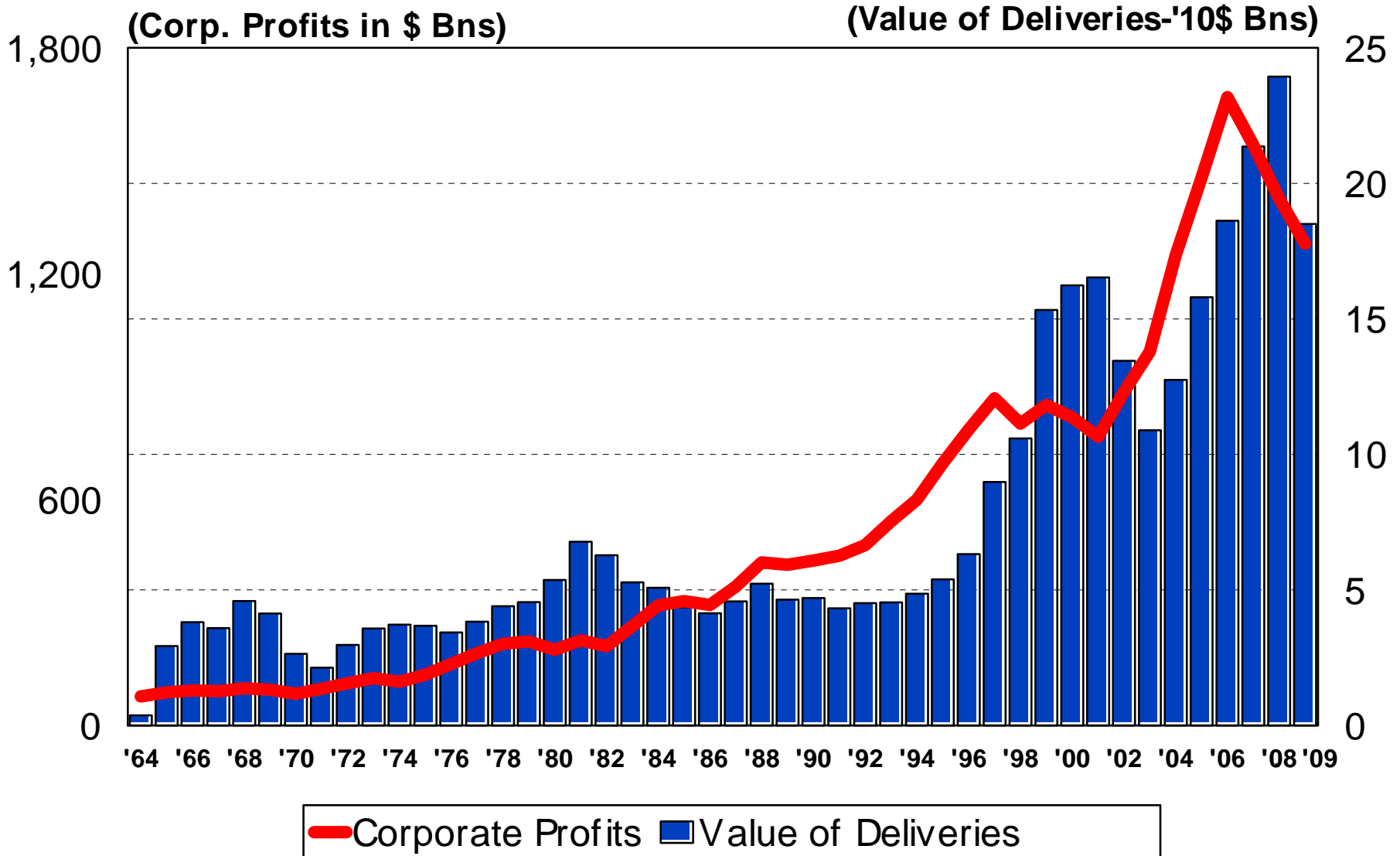
Business Jet Operations

Worst Moment: February 2009 (-30.5% Y/Y)



Source: FAA, BoA Merrill Lynch

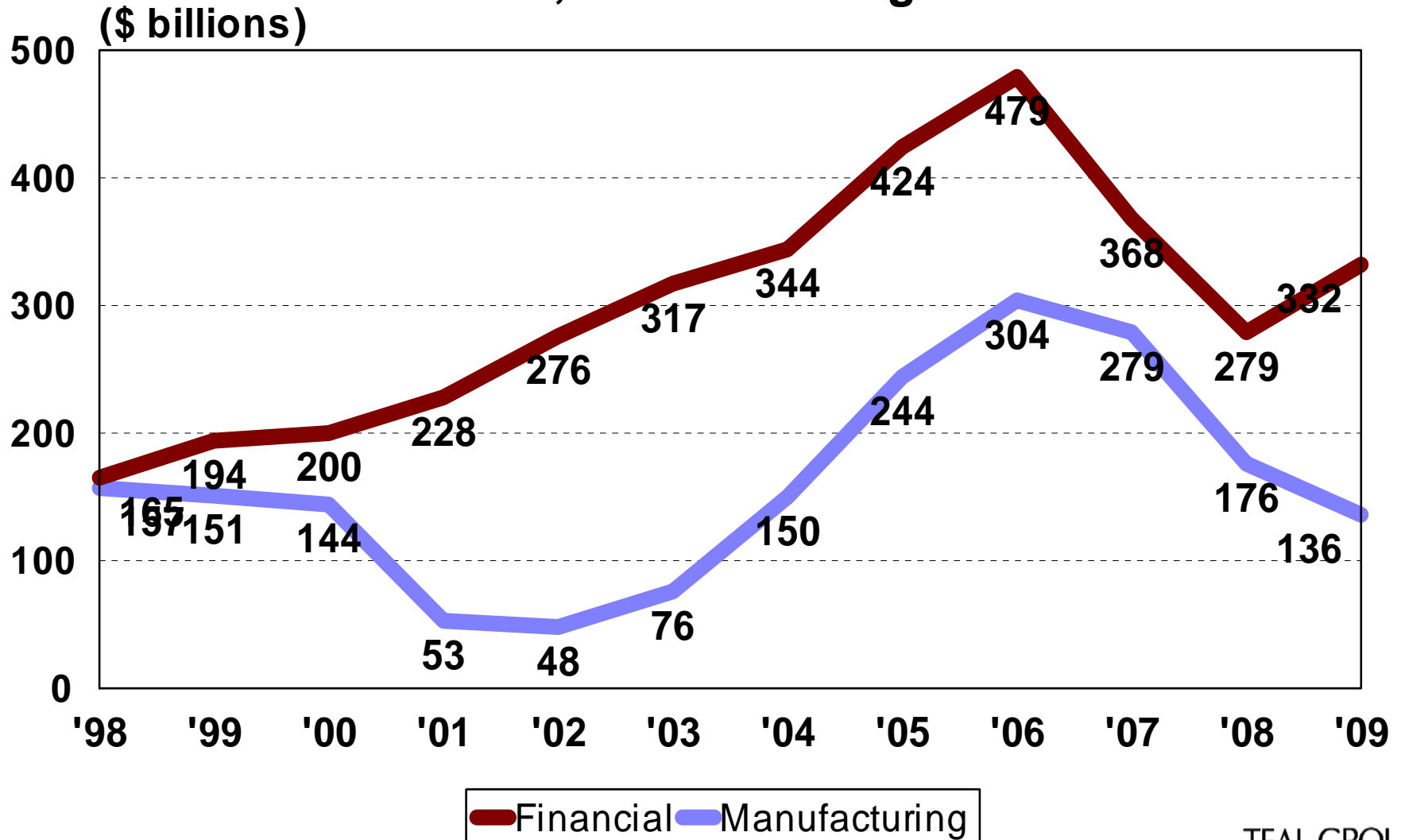
Business Aircraft Deliveries And Corporate Profits



Source: US BEA, Teal Group Research

Corporate Profits Breakdown

Business Jet Market Growth Closely Linked To, And A Key Enabler Of, Manufacturing Profits

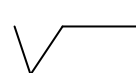


Source: US Gov. BEA

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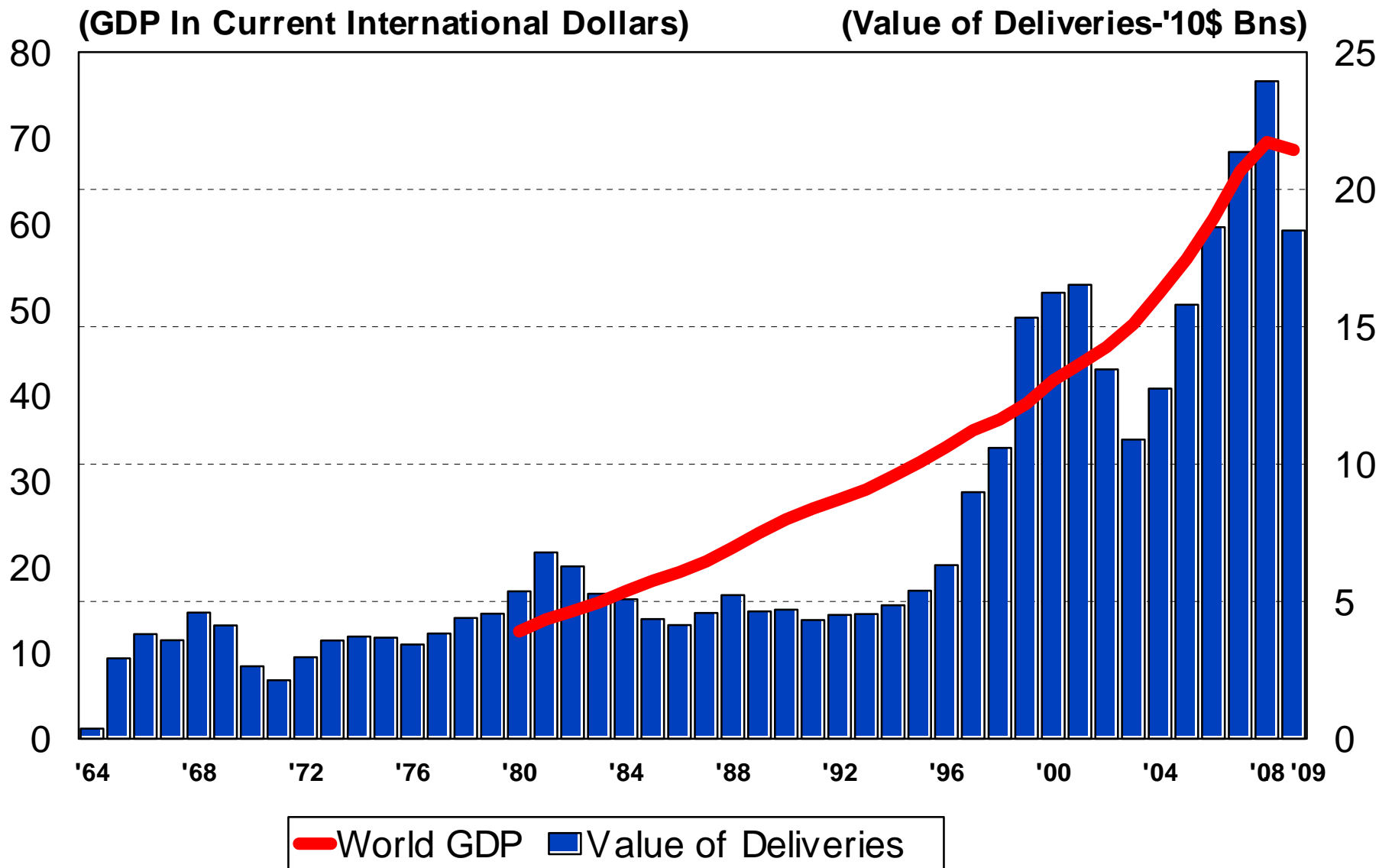


Business Jet Leading Indicators Stabilizing, But No Growth Yet

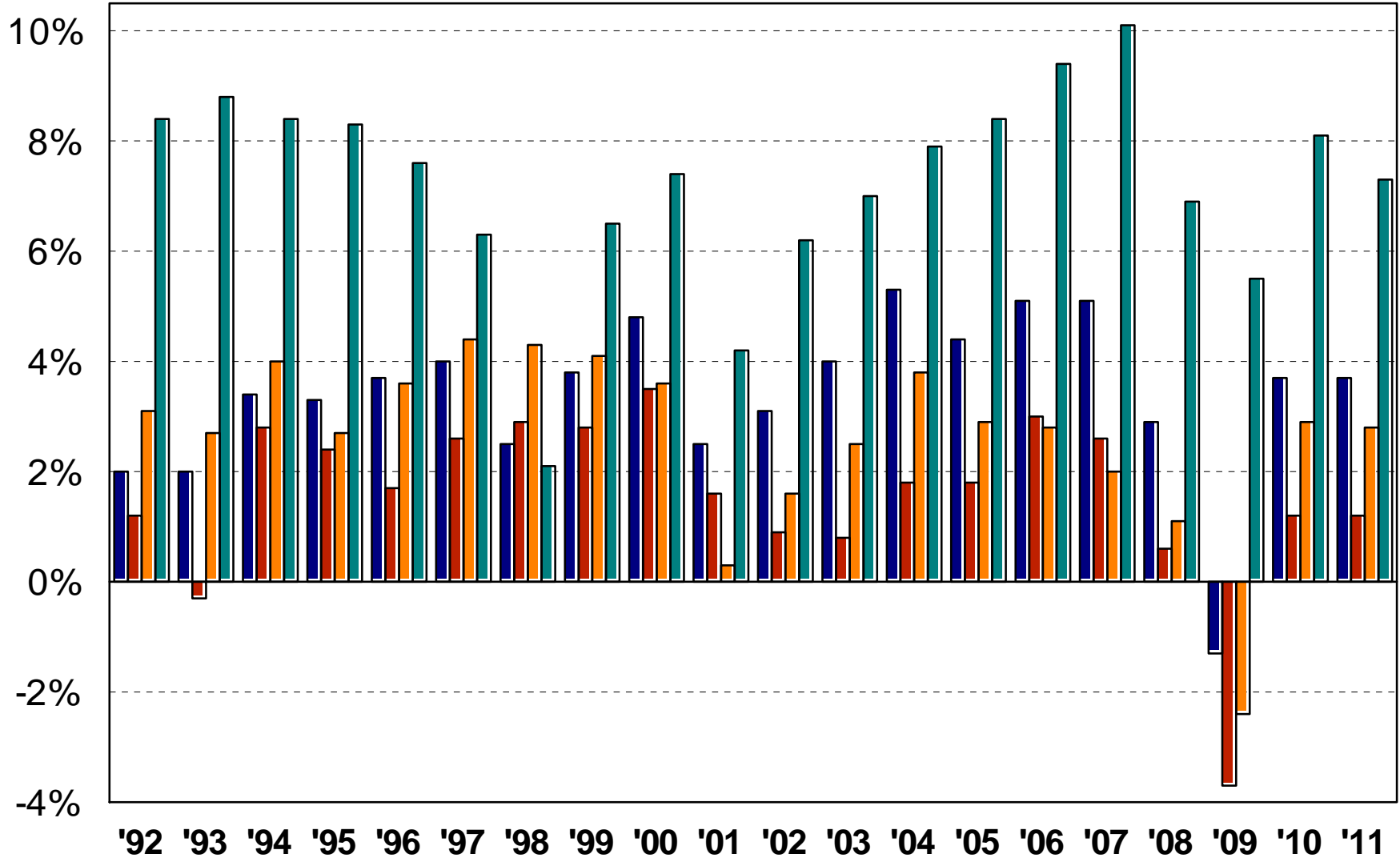
- Financial sector “green shoots”, but a very tentative “main street” recovery.
- Impact when stimulus spending ends?
- Economy moving sideways? W, V, L or  ?
- When growth begins, still 18+ months before new build deliveries growth.
- Good news: utilization/availability free-fall is over.
 - But prices uncertain.

US Profits (\$bns)	2004	2005	2006	2007	2008-1Q	08-2Q	08-3Q	08-4Q	2009-1Q	09-2Q	09-3Q	09-4Q
Total Corporate	1,247	1,456	1,608	1,542	1,460	1,404	1,455	1,124	1,183	1,227	1,359	1,468
Manufacturing	154.1	247.2	304.5	278.6	187.6	160.1	205.7	148.6	121.6	132.3	129.7	160.5
Financial	362.3	443.6	448	367.8	357.0	330.8	297.5	130.3	253.9	280.7	362.4	427.9
Source: US BEA												

Business Aircraft Deliveries And World GDP



GDP Year/Year Growth Rates

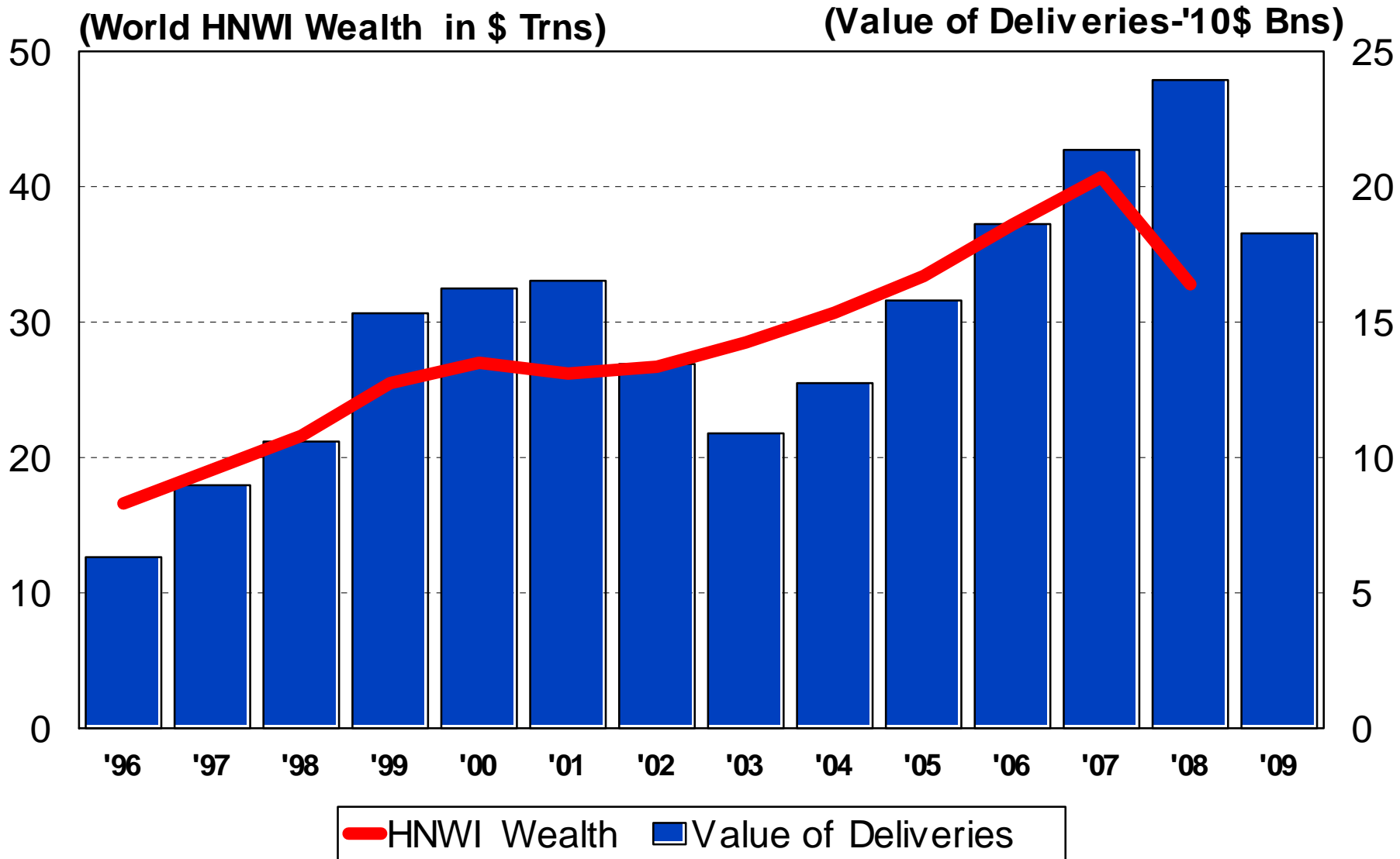


Source: Morgan Stanley

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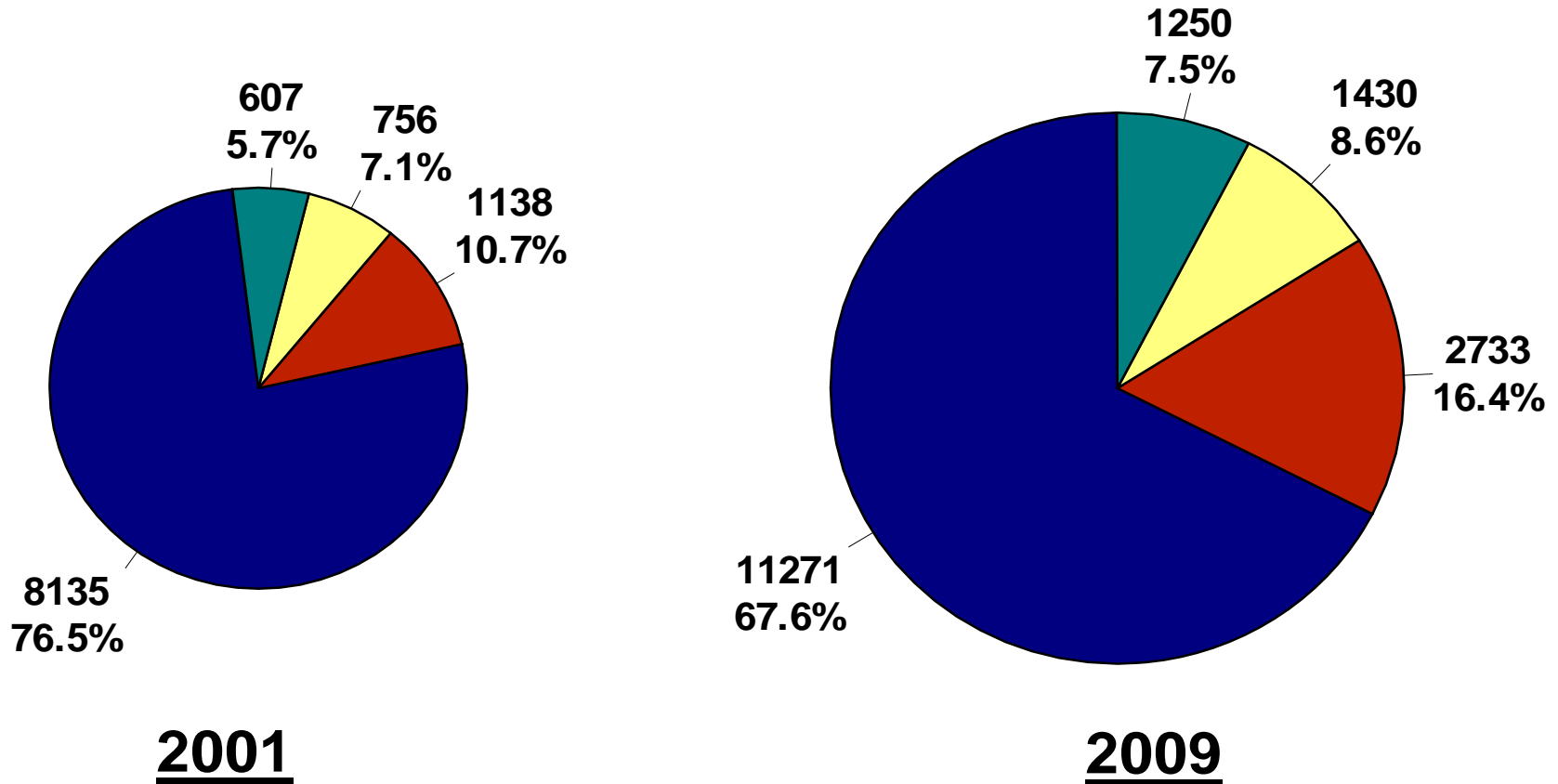


Business Aircraft And World HNWI Wealth



Source: Merrill Lynch/Capgemini

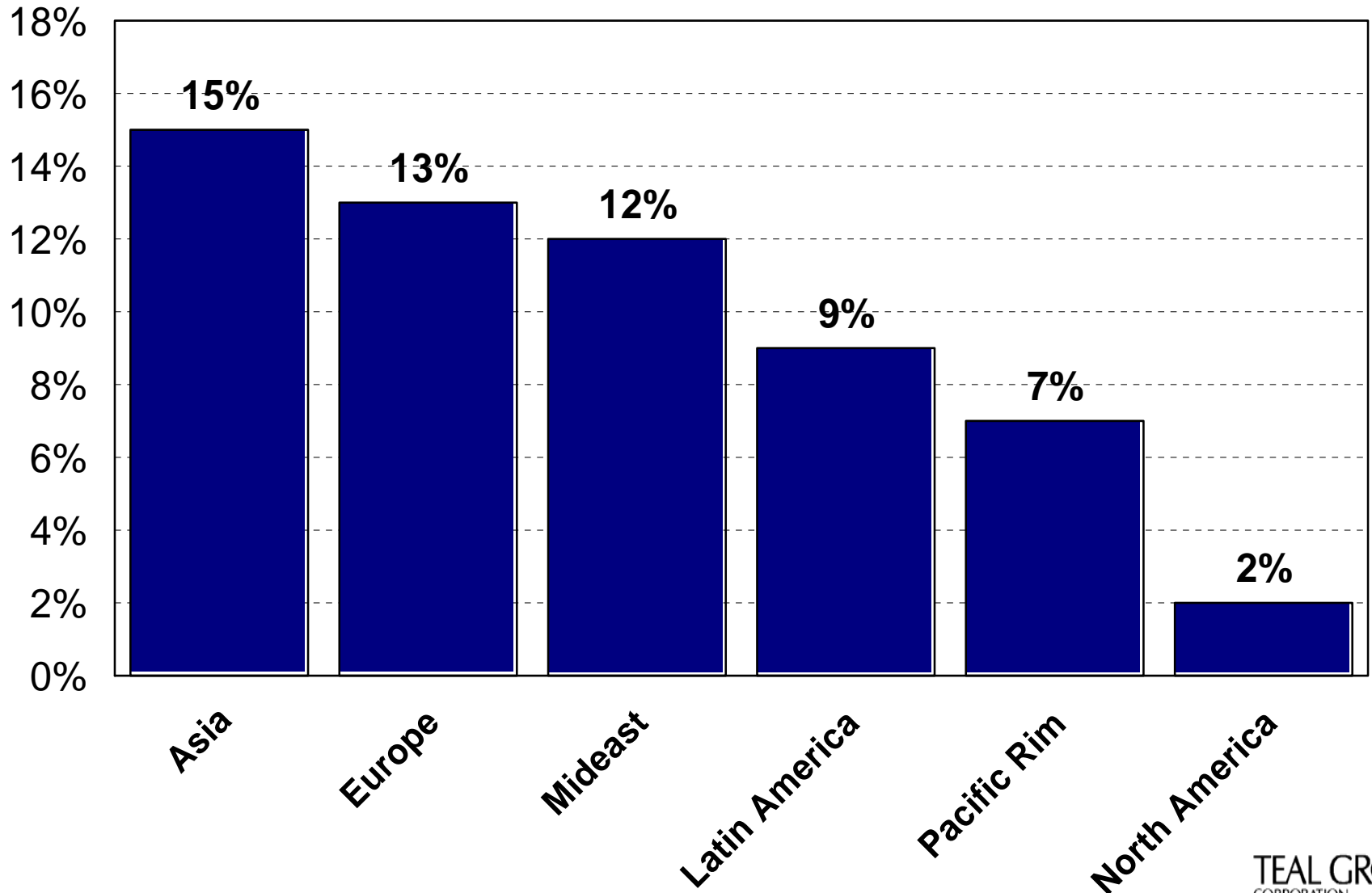
Jet Distribution By Region



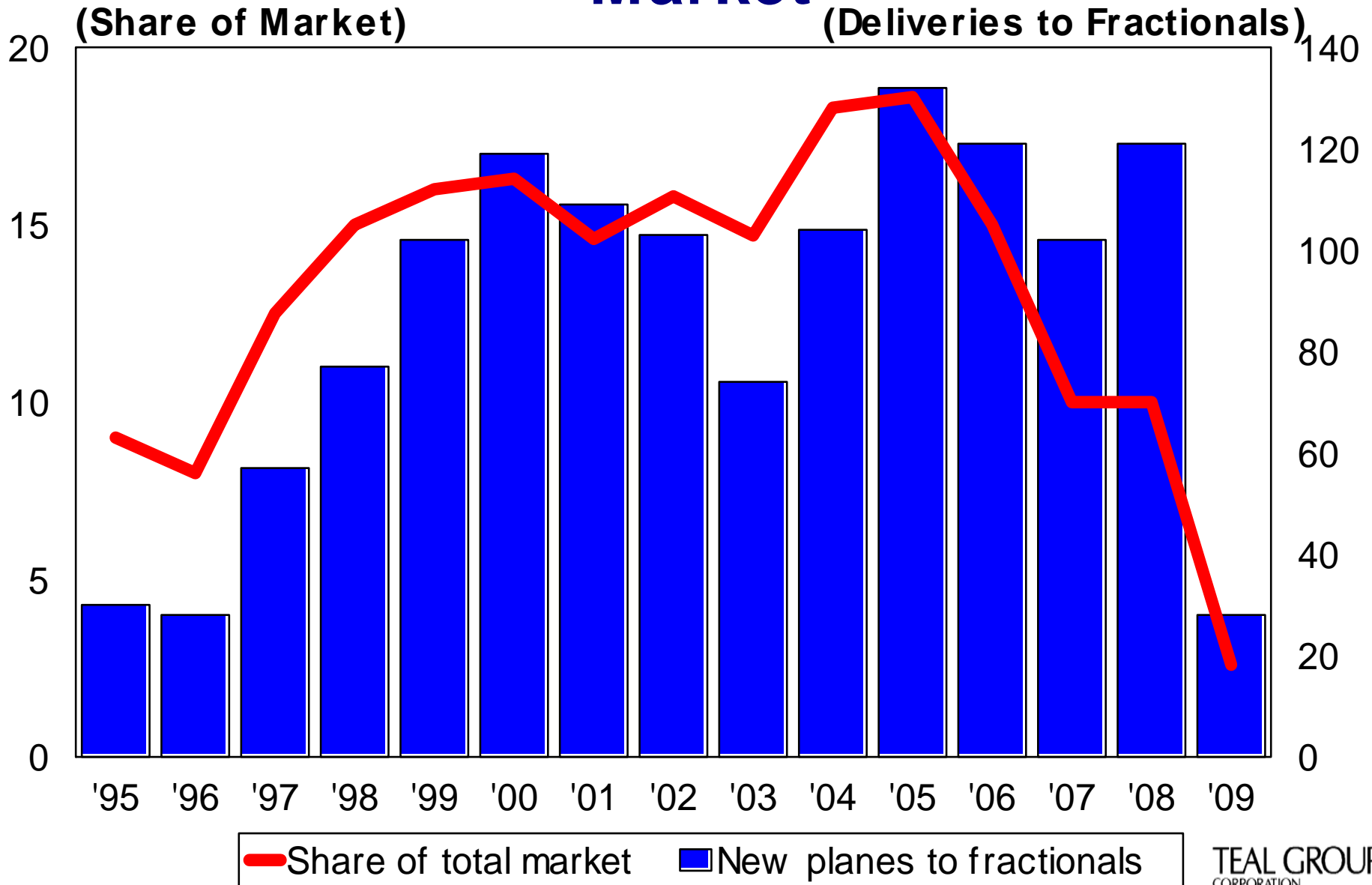
Source: ACAS

Business Aircraft Fleet Growth Rates

2009 Over 2008



Fractional New Deliveries And The Broader Market



Looking Ahead

Reasons To Still Be Concerned

- **Populism/Government interference with “nationalized” companies.**
- **Finance/OEM feedback.**
- **No fast-growth economy segment in sight.**
 - **Fast growth and strong profits aren’t the same.**
- **Tax incentives won’t work this time (the last time might have made things worse).**
- **New products and heavy spending.**
- **Utilization dropped much faster than any economic indicator.**
- **Record available aircraft numbers.**
- **New market entrants.**

Reasons To Be Hopeful. Or Not.

- **Ford took its planes off the market, after “not finding buyers.”**
- **China, with much of Asia following.**
- **Ongoing strength of globalization, trade, and de-centralized manufacturing.**
- **Ex-Im funding possible.**
- **Ongoing airline cutbacks.**
- **Security concerns (Maybe. But the plural of “anecdote” is not “data”).**

Cultural Attitudes Are Cyclical, Too

- **Wall Street (Oliver Stone, 1987). Gordon Gekko "Rich enough to have your own jet" gives greed a bad name; really teaches Wall Street bankers a lesson.**
- **“Sales of business jets, once the ultimate status symbols, have cooled with the US economy...The sleek stratospheric board rooms have come to represent corporate greed for some, and for others are simply no longer affordable.” USAToday, 2/11/03.**
- **“The business jet, a pricey perk that became a flying symbol of corporate excess, is making a comeback.” (Chicago Sun-Times, Nov. 14, 2004)**
- **2008: Obama and McCain campaign on private jets. McCain applauds Sarah Palin for putting the state jet on e-bay. President Obama criticizes bankers who “disappear on private jets.” Obama inauguration sets record for private jet arrivals.**

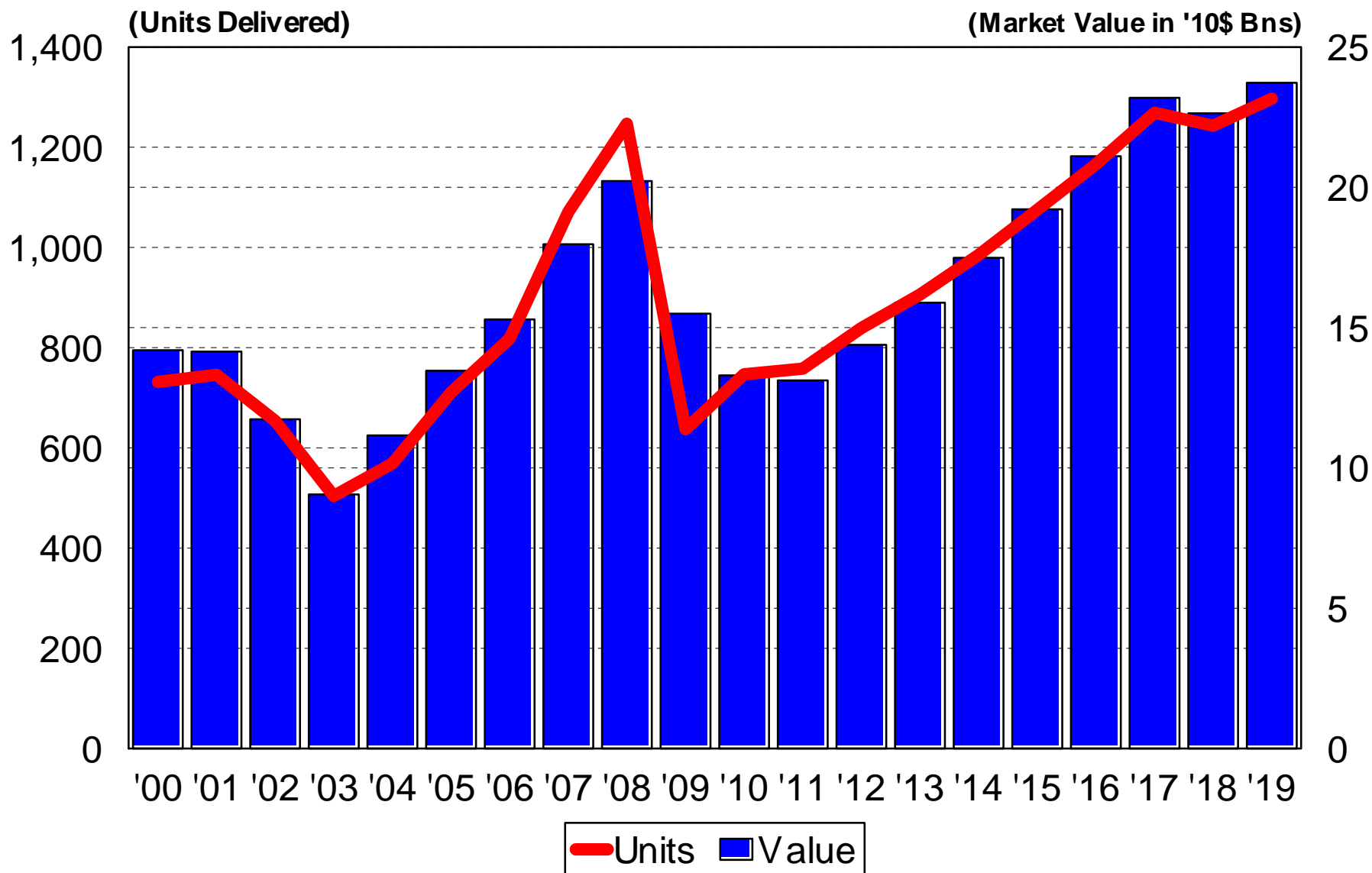
Forecast Assumptions

- **This is a three year downturn:**
 - **Recession/corporate profits: 2008 through a rather disappointing 2010.**
 - **Availability/pricing: 8-2008 through 3Q 2010.**
 - **Deliveries: 2009-2011.**
- **Trough: 2011, 35% (value) off 2008 peak.**
 - **Compare with two year -34% drop in 2001-03.**
- **Recovery: six years at 10% CAGR**
 - **This is conservative – 2003-2008 was @17.2%.**
 - **No help from fractionals and other concepts.**
 - **The broader economy: less leverage, less aggressive finance, but more durability.**

Teal's 20th Business Jet Forecast

- **Deliveries of 10,285 bizjets worth \$184.1 billion ('10\$) in 2010-2019.**
 - **Plus 643 business jetliners/RJs worth \$35.8 billion.**
 - **Plus 3,041 turboprops worth \$13.2 billion.**
 - **Comparison: 7,889 bizjets worth \$143.4 in 2000-2009 ('10\$).**
- **We don't think the bottom half will recover or grow faster than the top half.**
 - **That's a major structural shift in market, with significant market share implications.**

Business Jet Forecast: This Will Take Time



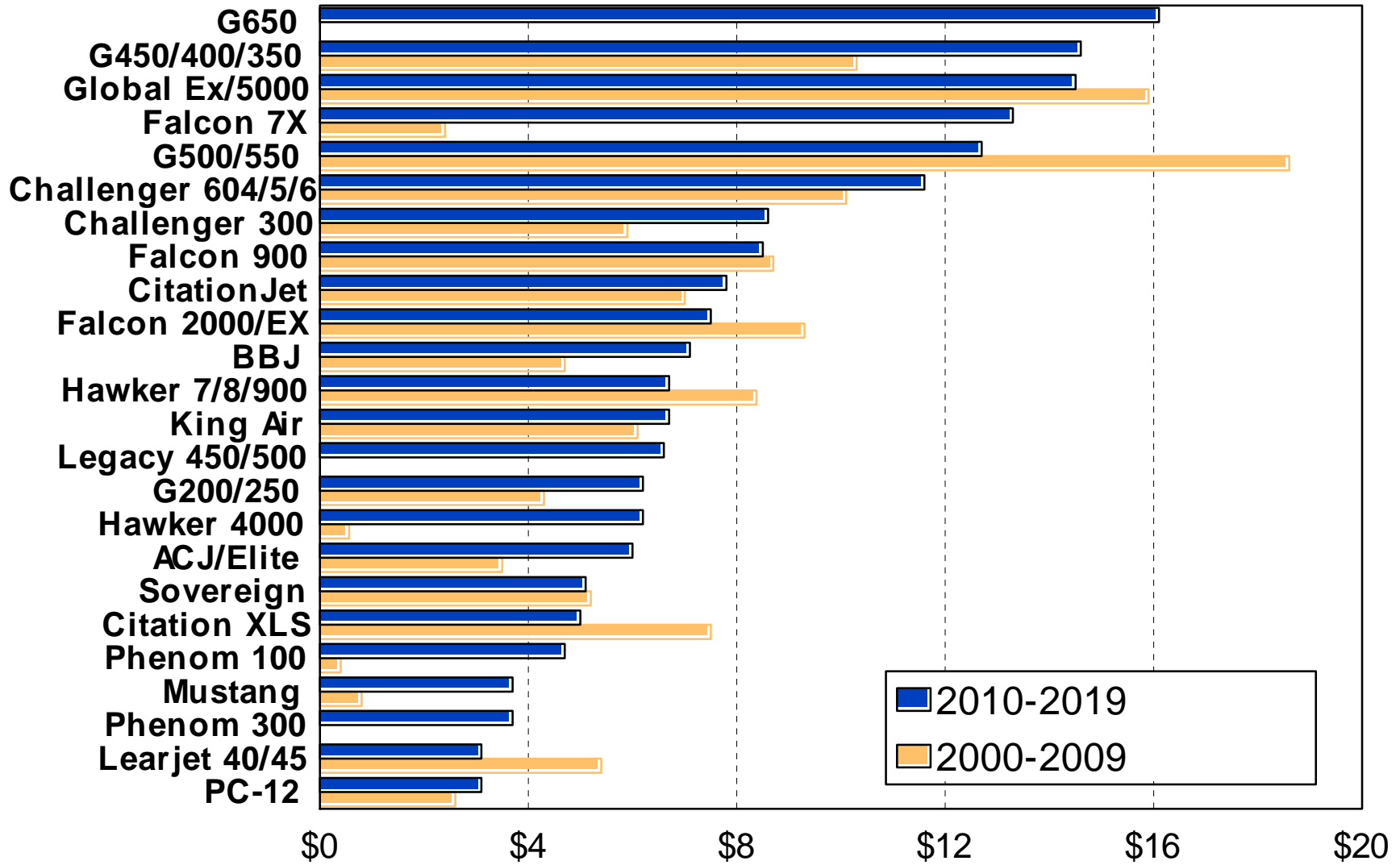
Excludes jetliners, RJ, turboprops



Manufacturers, Products, Market Dynamics

Programs: Larger Models Dominate

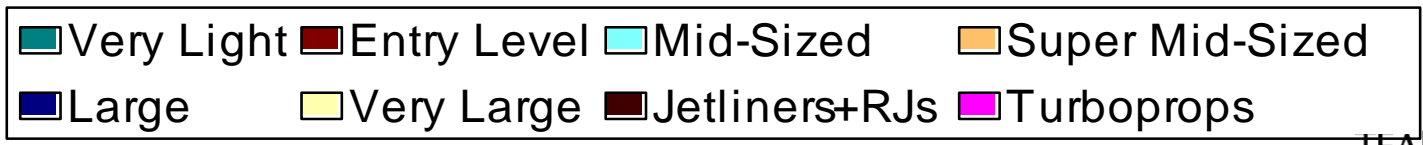
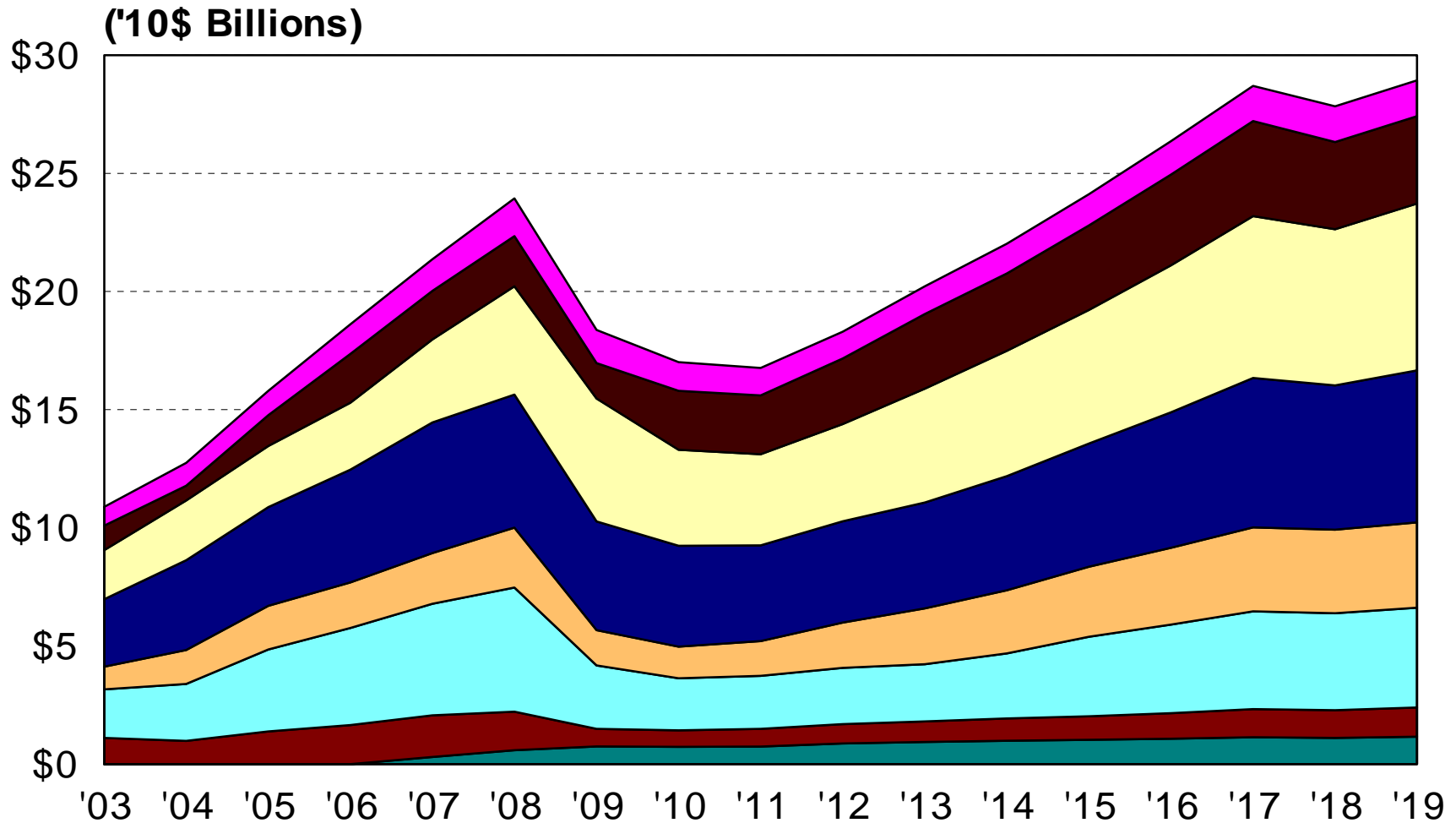
Cumulative US '10\$ Value



All programs >~\$3 bn

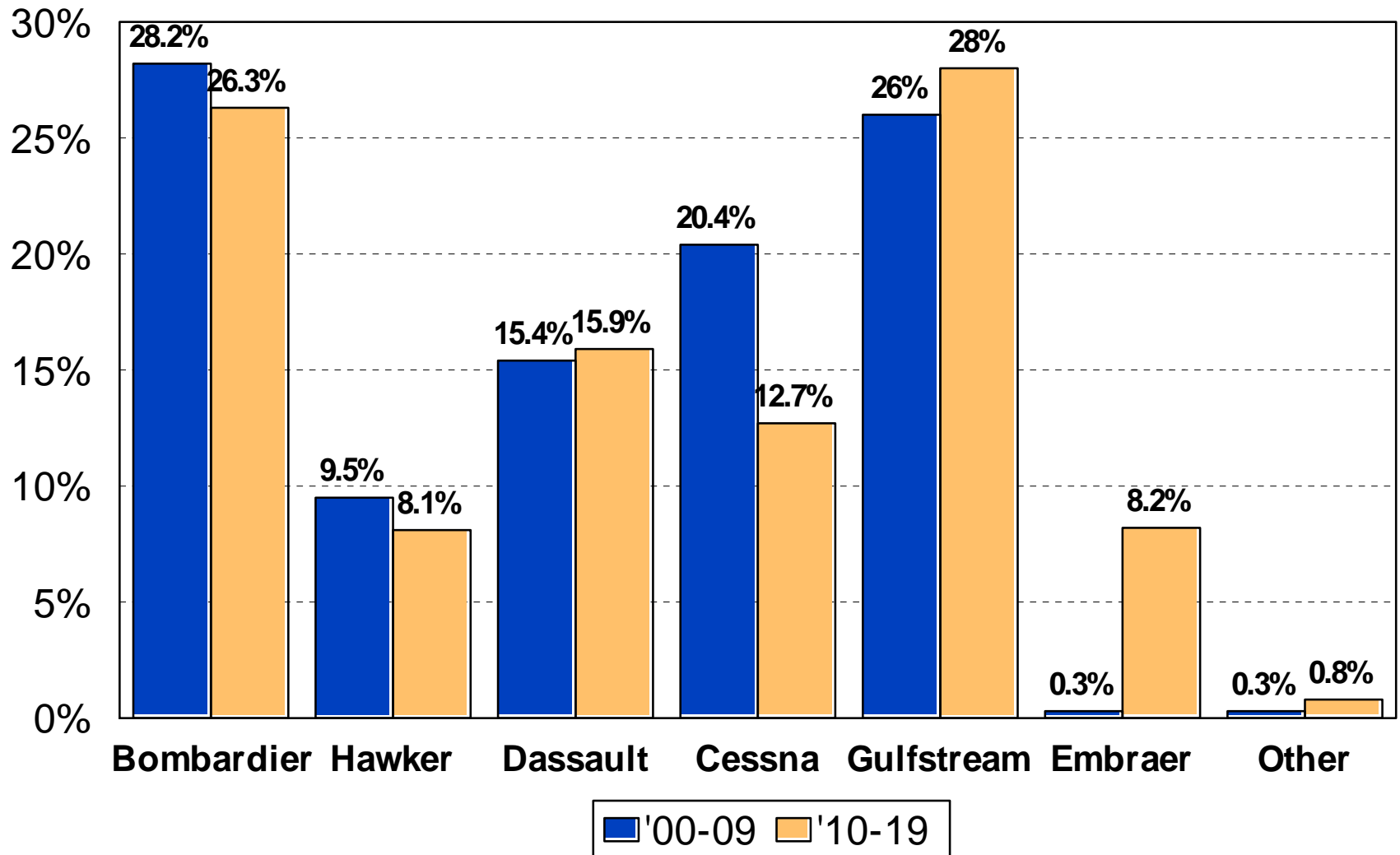


Business Aircraft Market By Class



Business Jet Manufacturer Market Shares

By Deliveries Value, 2010-2018 Vs 2000-2009



Excludes jetliners, RJs, turboprops

Barriers To Aviation Market Entry: Stubbornly High

Even In This Segment

- **One successful new civil jet manufacturer since 1960. Tough for niche players.**
- **Capital requirements: for \$1 billion, you can dig yourself a hole...**
- **Honda, the great exception.**
- **Prop guys moving up?**
- **Are we losing our magnetic attraction?**
 - **Bombardier's CSeries.**
 - **Embraer's KC-390.**

VLJs/Air Taxis: We Can Learn A Lot From This Atrocity

- **It's Worse Than That, They're Dead, Jim:**

Adam Aircraft, Safire, Avocet, AASI, Century Jet, ATG, Promavia, Visionaire, Eclipse, Grob Utility Jet.

- **It's Life Jim, But Not As We Know It:** Sino-

Swearingen, Epic Elite/Victory, D-Jet, Piperjet, Cirrus Jet, Spectrum Aeronautical.

- **People Who Definitely Will Profit From**

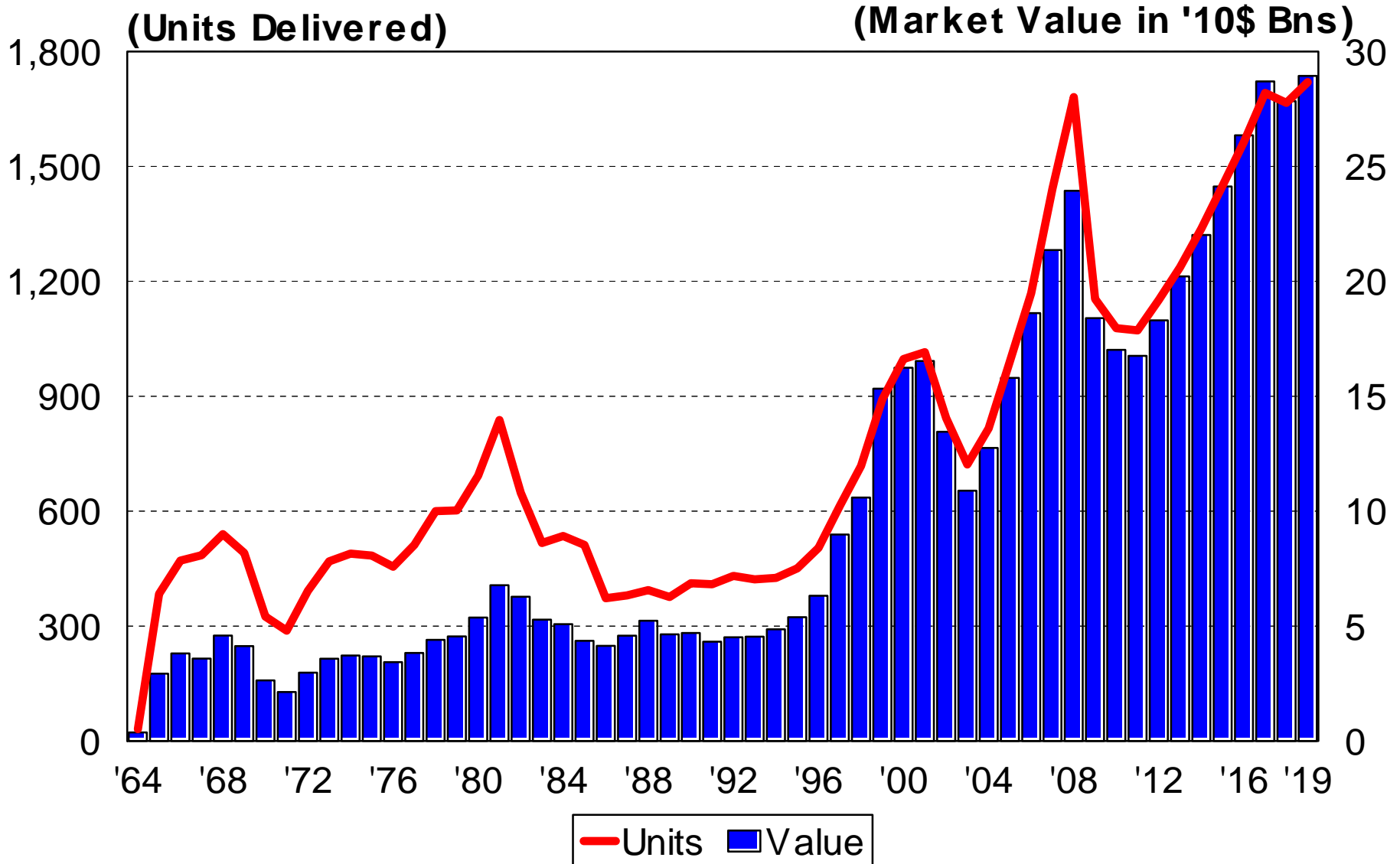
This Bloated Fiasco: Cessna, Embraer, Pratt &

Whitney Canada.

A Few Concluding Thoughts

- I am not aware of any responsible forecasts calling for an end to long-term economic and corporate wealth growth.
- I am not worried about de-linkage between these drivers and business aircraft demand.
 - “All of this has happened before, and all of this will happen again.”
- We’re clawing out. But I am worried about the next six months.

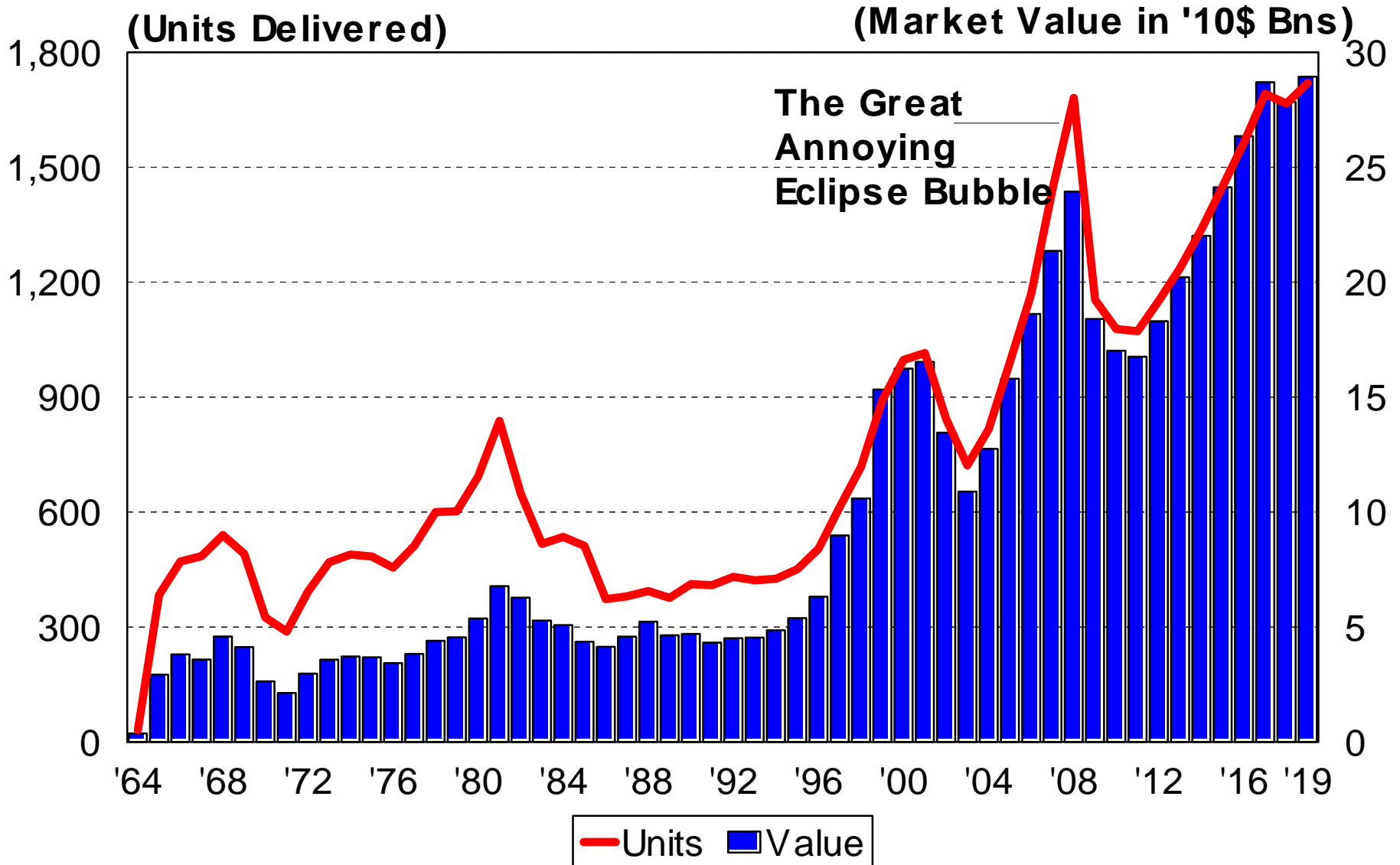
Let's Keep Things In Perspective



Includes Jetliners, RJs, turboprops



Let's Keep Things In Perspective



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