

# COVID-19 And Civil Aviation Markets

## New Dawn Fades

Richard Aboulafia  
Vice President, Analysis  
Teal Group Corporation  
[www.tealgroup.com](http://www.tealgroup.com)

Fifth Update; August 3, 2020

# Last Month's Developments

## *Through August 3; Starting To Feel The Full Effects*

- **False start to recovery; traffic numbers remain apocalyptic as pandemic persists; IATA now at -63% for 2020.**
- **Increasingly confrontational relationship between OEMs, customers.**
- **Airbus didn't cut single aisles further; just one less A350 /month.**
- **More drastic (and realistic) cuts at Boeing.**
  - **777X delay until 2022; 787 down to 6/month (one FACO likely to end); 747 officially ending.**
  - **MAX production restart, but plan is now for most of the 450 built planes to be delivered in 2021, leaving little room for new-build ac; how will suppliers cope?**
  - **More MAX deferrals/cancelations...most vulnerable program due to MAC clause.**
- **Relations between the West and China, the single biggest export market, continue to worsen.**
- **Business aviation recovery stronger and faster than commercial.**
- **Continued disconnect between relief measures, industry production plans and the downturn's likely depth and duration.**

# COVID-19 And Aero Markets

## *Issues And Impact*

- **Apparently, these things come in pairs:**
  - The fuel price shock is as important as traffic.
  - Or trios. Recession too.
  - Also, traffic de-link from economics already in play.
  - And China – economy, relations with the West, likelihood that it goes its own way in aviation, diminished air travel growth, etc....
- **What's different this time:**
  - Airlines in better shape (going into the crisis).
  - Government more aggressive about response, so far.
  - No more interest rate stimulus; third party finance stimulus also unrepeatable.
  - Growth accelerated post 2008 due to several unusual factors (interest rate/fuel price bifurcation, emerging markets-particularly China); none are in play today.
- **The state aid question, and strings attached.**
  - With state aid, a “synthetic market” pulls demand forward.
- **Impact on R&D budgets likely to be profound.**
  - Both for new models, and advanced tech development.

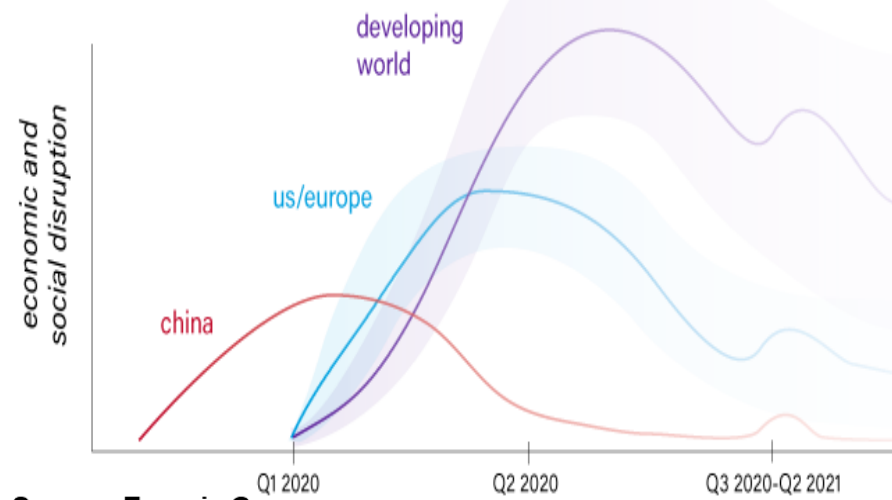


# “You don’t make the timeline, the virus makes the timeline.” (Dr. Fauci)

- **The economy, and people’s willingness to fly, depends on Coronavirus, and really nothing else.**

- Limited air travel recovery due to secondary outbreaks.
- Vaccine development/distribution is an 18-month process. Some hope for a 1Q2021 *deus ex machina*.
- Therapeutic drugs, instant tests may arrive sooner, accelerating pre-vaccine recovery rates.
- **Most likely traffic scenario is an L-shaped market, with an upward-angled floor, lasting 2-3 years.**
- **Another possibility scenario is a U-shaped recovery, with the floor lasting about two years. But it’s not a V.**
- **Return to 2019 traffic peak in late 2023, we hope; IATA now saying 2024; some say 2025.**
  - **Teal Group now in the odd position of offering the optimistic forecast.**

three tracks of coronavirus pandemic



Source: Eurasia Group

# Aircraft Markets, In Good And Bad Years

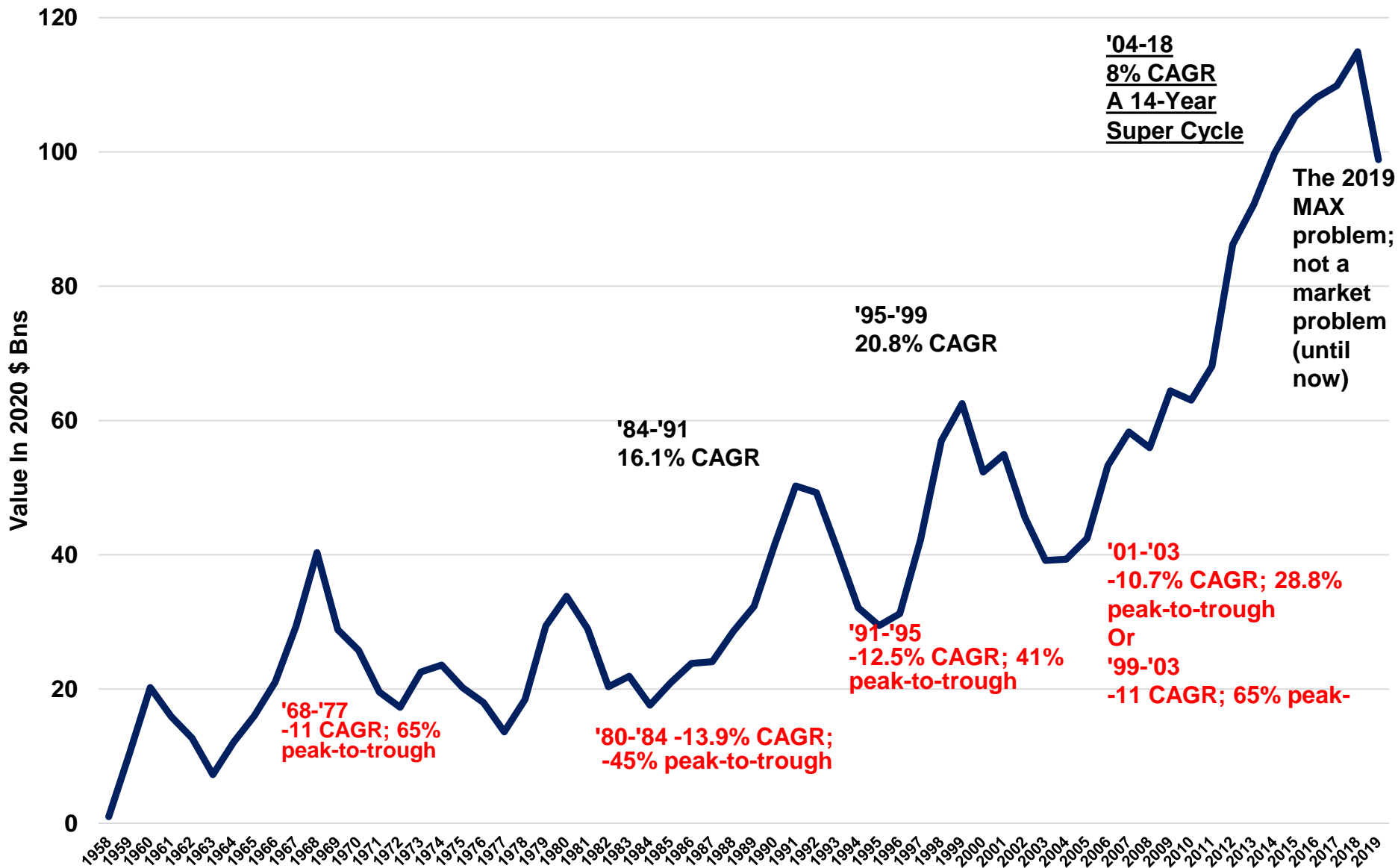
<u>World New Deliveries</u>	<u>CAGR</u>	<u>CAGR</u>	<u>CAGR</u>	<u>Change</u>
<u>In 2019 (2020 \$)</u>	<u>'03-'08</u>	<u>'08-'14</u>	<u>'14-18</u>	<u>'18-'19</u>
Jetliners-SA (\$46.2 b)	9.7%	6.9%	5.0%	<b>-23.9%</b>
Jetliners-TA (\$55.3 b)	5.0%	13.5%	1.7%	2.0%
Regionals (\$5.8 b)	3.9%	<b>-3.1%</b>	<b>-5.2%</b>	<b>-5.1%</b>
Business Aircraft (\$22.4 b)	16.7%	<b>-2.2%</b>	<b>-5.0%</b>	15.6%
Civil Rotorcraft (\$3.9 b)	18.5%	<b>-2.5%</b>	<b>-7.4%</b>	<b>-6.6%</b>
Military Rotorcraft(\$13.3 b)	10.6%	9.6%	<b>-11.8%</b>	16.9%
Military Transports (\$4.9 b)	3.2%	<b>-0.9%</b>	0.2%	<b>-1.2%</b>
Fighters (\$24 b)	1.6%	0.8%	2.5%	25.5%
<u>All Civil</u> (\$133.8 b)	<u>9.7%</u>	<u>5.6%</u>	<u>1.4%</u>	<b><u>-7.6%</u></b>
<u>All Military</u> (\$45.5 b)	<u>3.9%</u>	<u>4.0%</u>	<b><u>-3.3%</u></b>	<u>16.6%</u>
<u>Total</u> (\$179.3 b)	<u>8.0%</u>	<u>5.2%</u>	<u>0.3%</u>	<b><u>-2.4%</u></b>

# Aviation Segments By Damage

*Most to Least*

<b>Twin aisle jetliners</b>	<b>International traffic hit hardest and longest. Already an overcapacity situation. Secular shift towards single aisles already underway.</b>
<b>Single aisle jetliners</b>	<b>Fuel prices a big problem. China comeback uncertain. Some relief due to deferred Airbus ramp, and MAX stop.</b>
<b>Business Jets</b>	<b>Large cabin strongly correlated with oil prices. Small/medium strongly correlated with corporate profits, equities indices.</b>
<b>Civil Rotorcraft</b>	<b>Oil and gas segment (large) hit again, before recovery even began.</b>
<b>Military Programs</b>	<b>Emphasis on “shovel-ready.” Advance development programs at greater risk. Pure-play contractors in best shape; suppliers with most defense in best shape.</b>

# Cyclicality, Our Long-Forgotten Nemesis



# Two Metrics To Watch

## One Crisis May Be Peaking; The Next Might Be Starting

Market Summary > Zoom Video Communications Inc  
NASDAQ: ZM

+ Follow

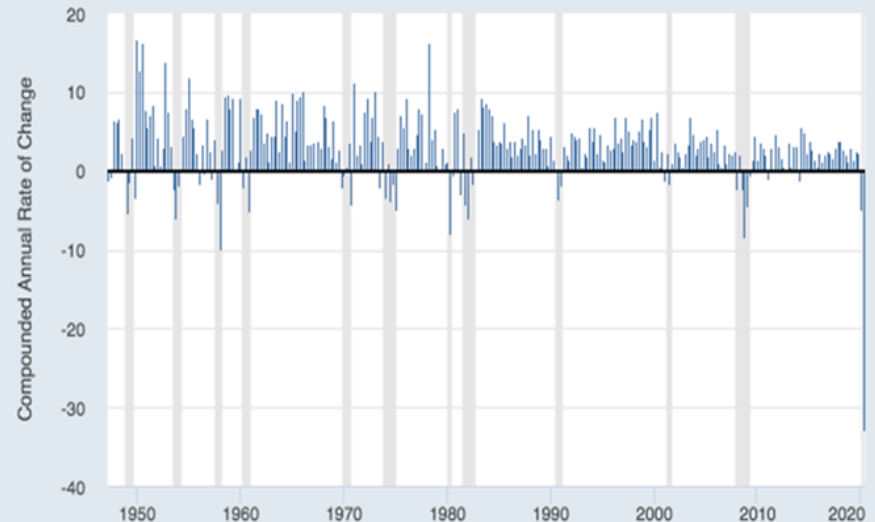
253.91 USD +3.91 (1.56%) ↑

Jul 31, 4:00 PM EDT · Disclaimer



Open	253.50	Div yield	-
High	255.20	Prev close	250.00
Low	248.36	52-wk high	281.00
Mkt cap	71.63B	52-wk low	60.97
P/E ratio	1,403.83		

FRED Real Gross Domestic Product



Source: U.S. Bureau of Economic Analysis

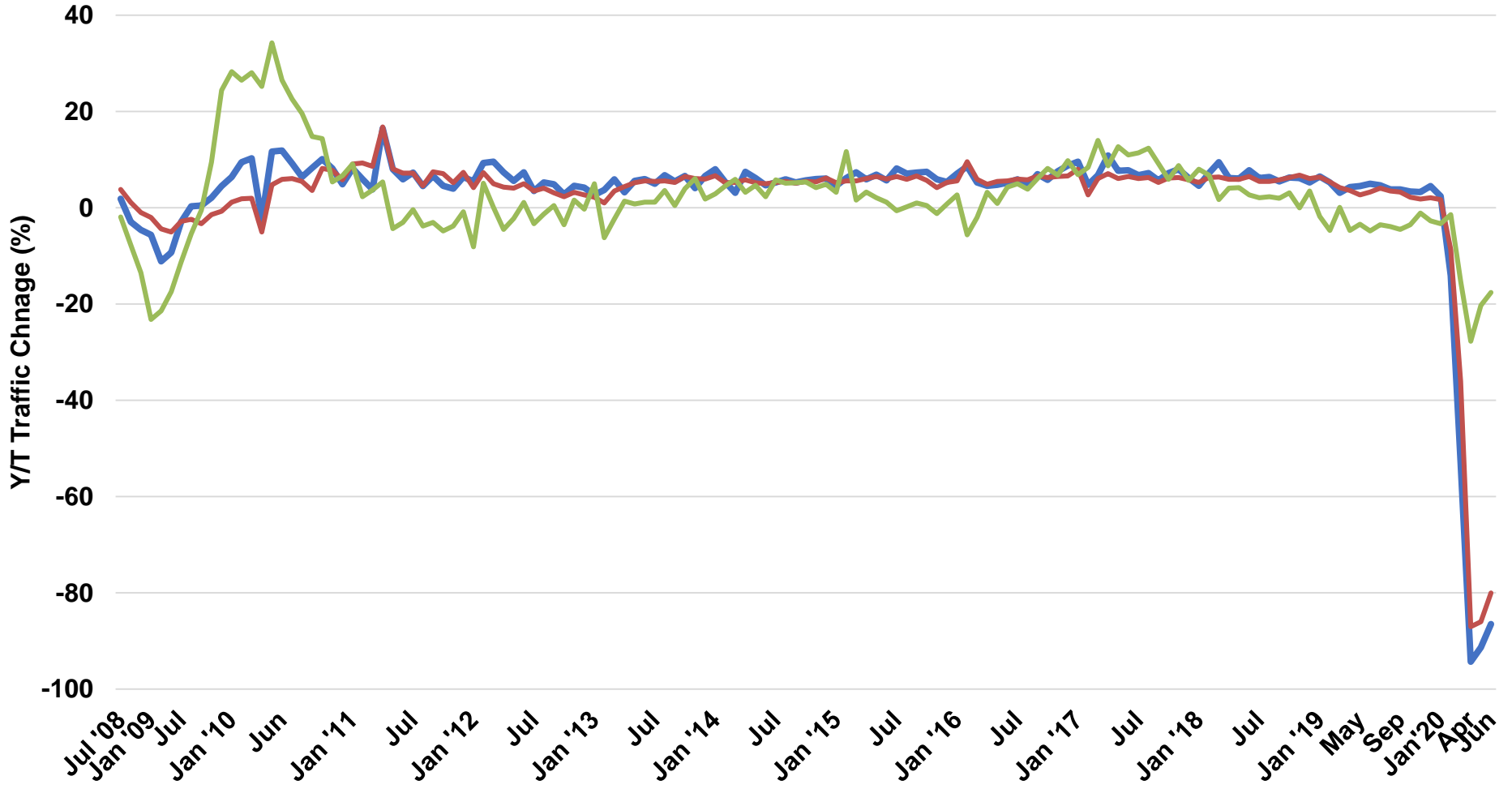


# Traffic: Like Nothing We've Ever Seen Before

63% Decline in 2020?

2019 Totals: RPKs 4.2%, ASKs 3.4%, FTKs -3.3%

2018 Totals: RPKs 6.5%, FTKs 5.4%; 2017: RPKs 7.6%, FTKs 9%



Source: IATA

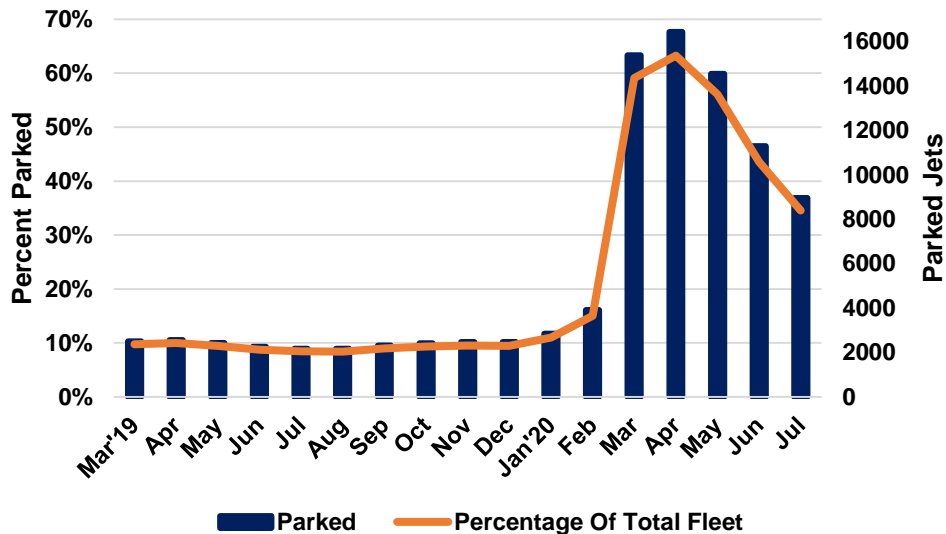
— RPKs — ASKs — FTKs



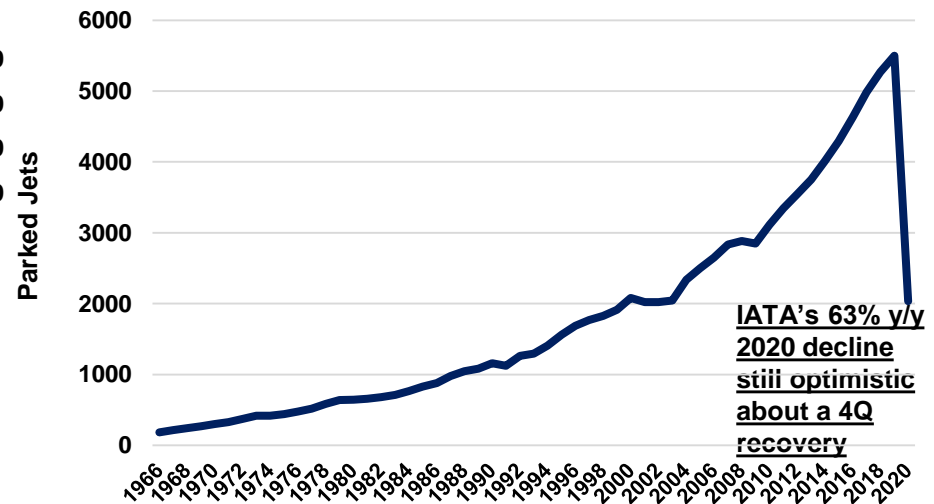
# More Unprecedented Numbers

- **Traffic decline, parked fleet like no previous shock.**
  - Per Paul Krugman, reflect a world economy in a “medically-induced coma.”
  - Again, traffic recovery is determined by the virus, not politicians or economics.
- **Backlogs holding up (MAX a concern), but meaningless in a downturn.**
  - Just 1% of January backlog has cancelled; over one third has deferred.
- **Many early retirements coming, particularly twin aisles.**
  - Primarily twin aisles; A380 bloodbath.
- **Aftermarket catastrophe.**
  - 63% down ASMs (70%, really), de-stocking, deferred maintenance/upgrades, plentiful USM with early retirements.

World Jet Fleet: Now ~35% Unemployed



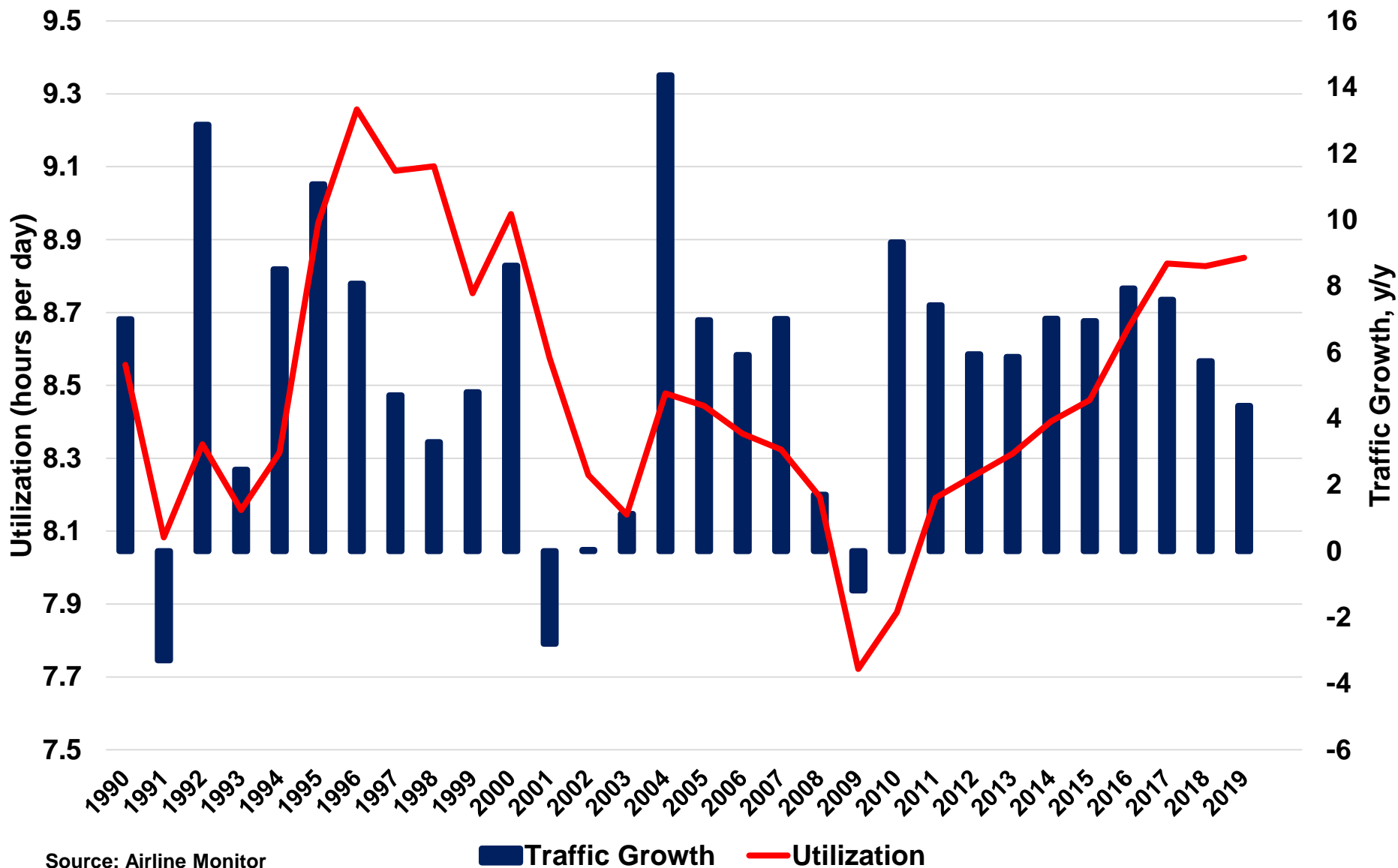
World Air Traffic (RPM Bns)



IATA's 63% y/y 2020 decline still optimistic about a 4Q recovery

# Lower Utilization Can Help With Overcapacity

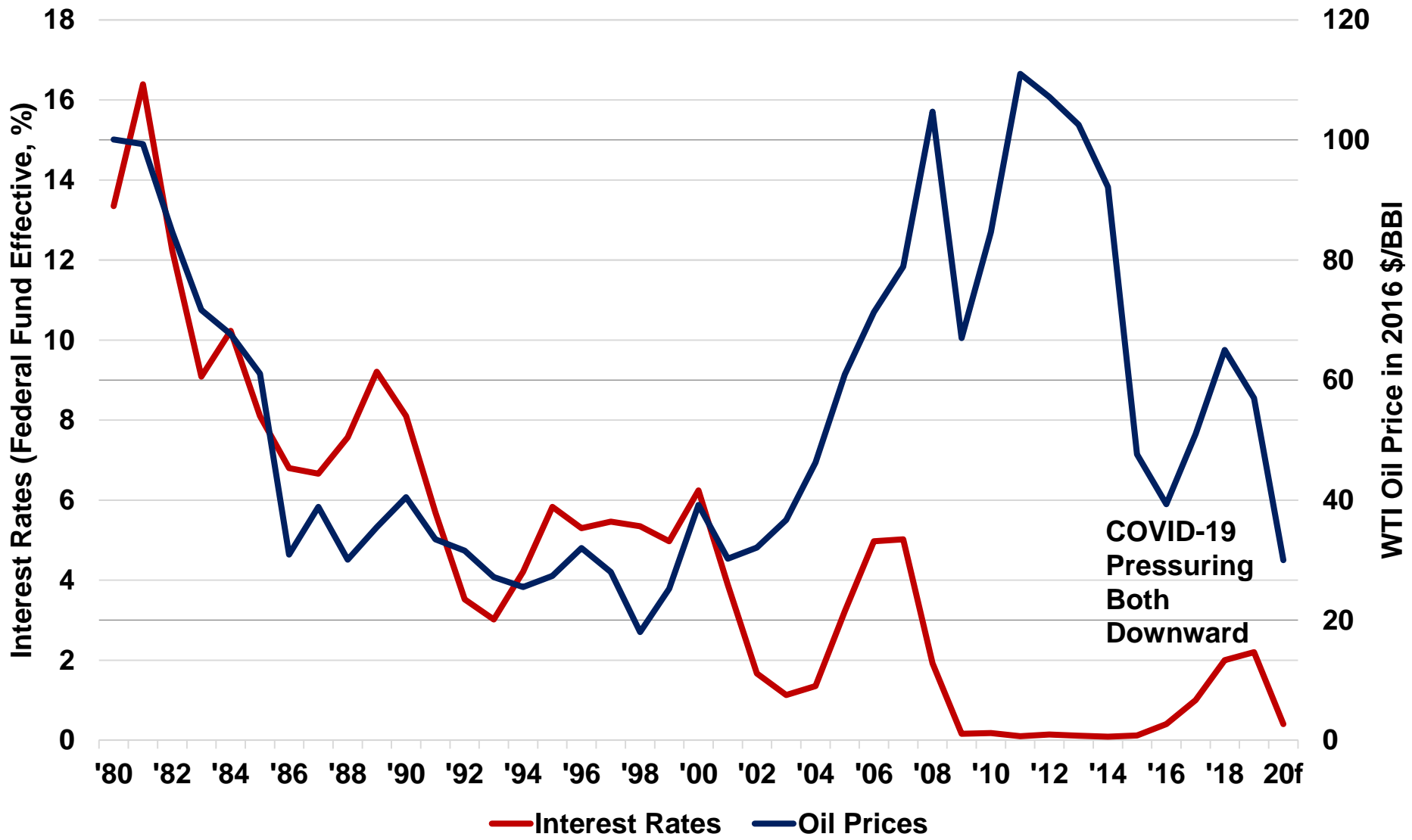
## But A 48%+ Traffic Drop Is Another Story



Source: Airline Monitor

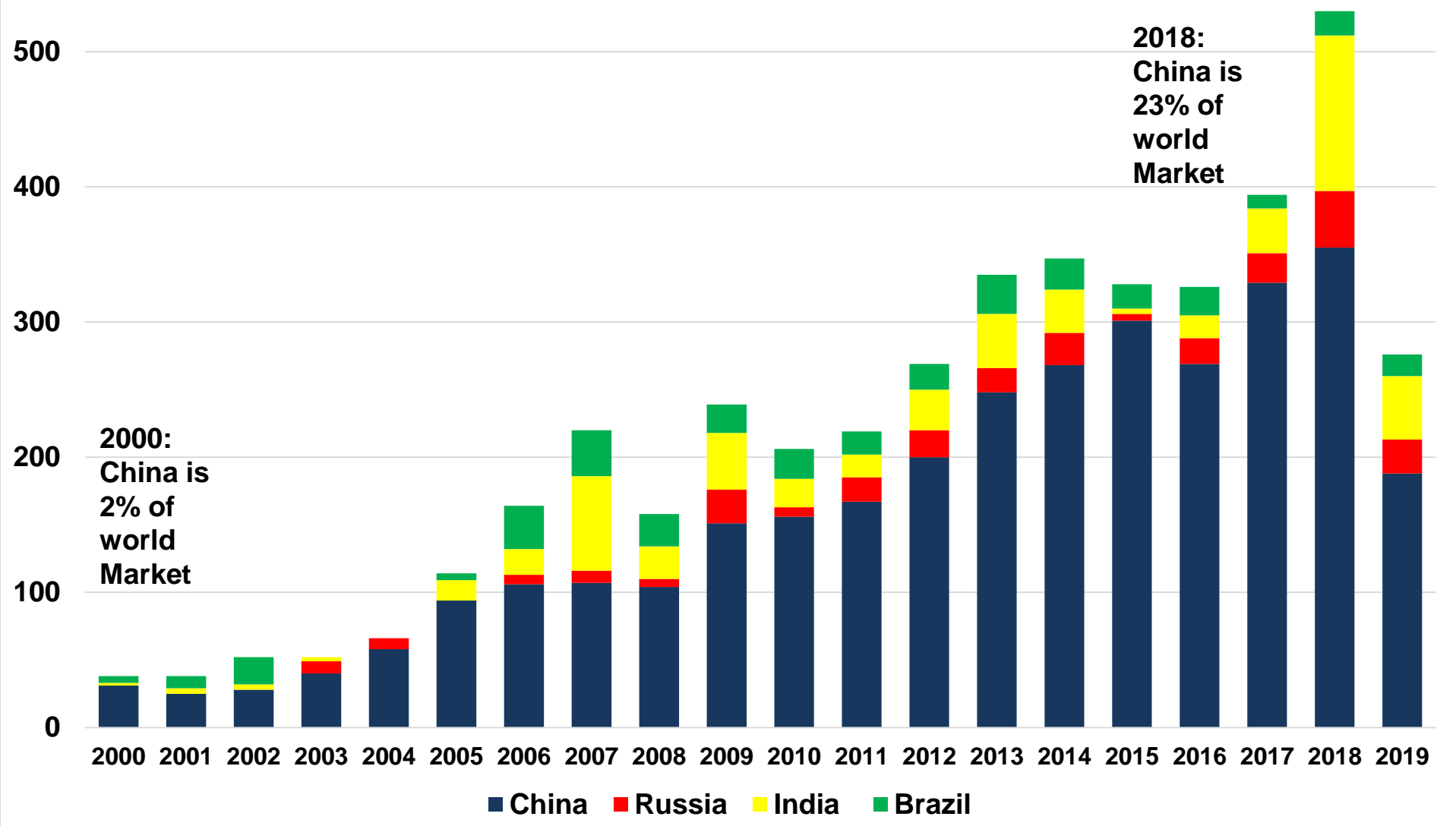
■ Traffic Growth — Utilization

# Interest Rates And Oil Prices: Less Than 4%, And \$50-85/bbl, Ideally; But The Ratio Matters Most

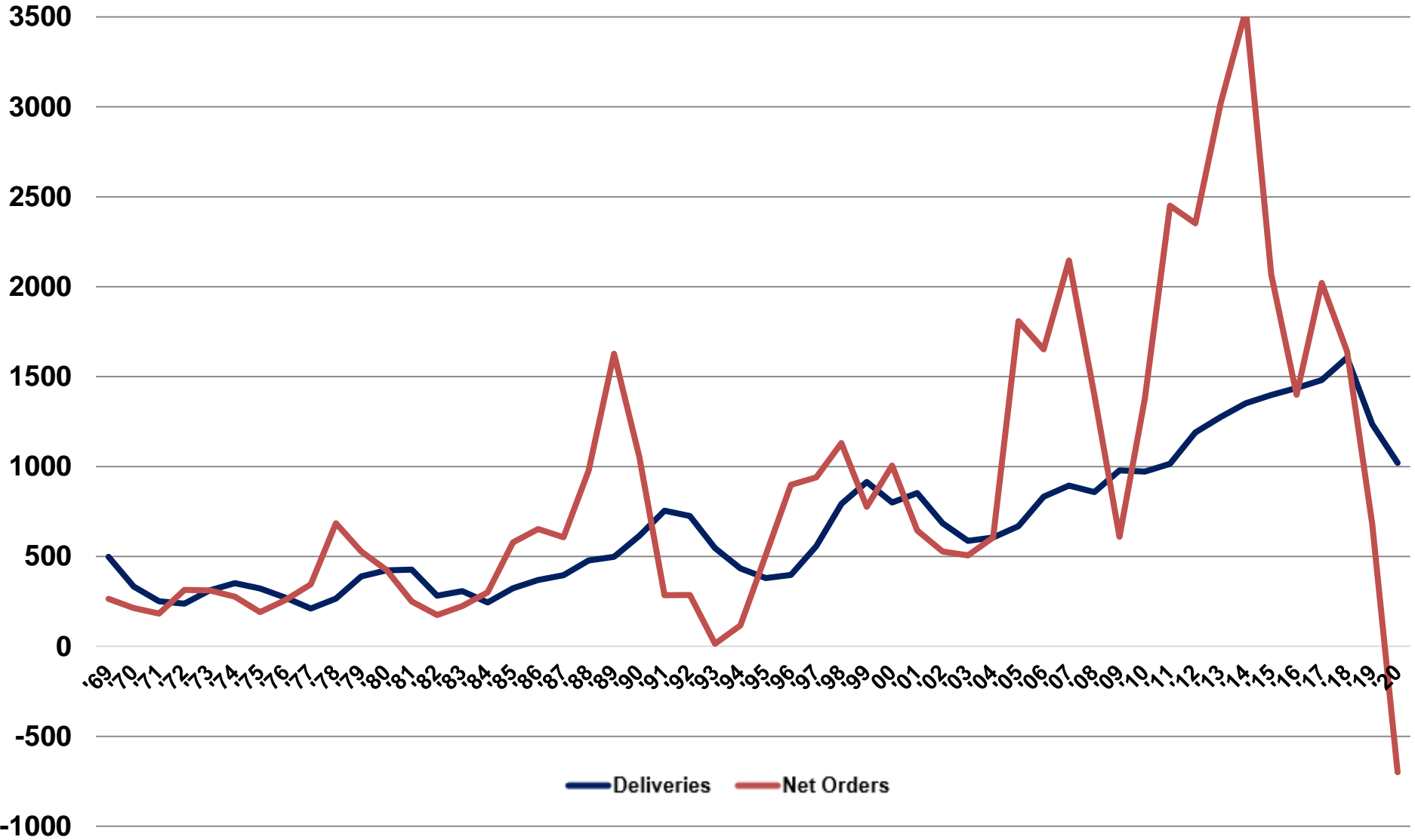


# BRIC Deliveries: Peaked; Watch China

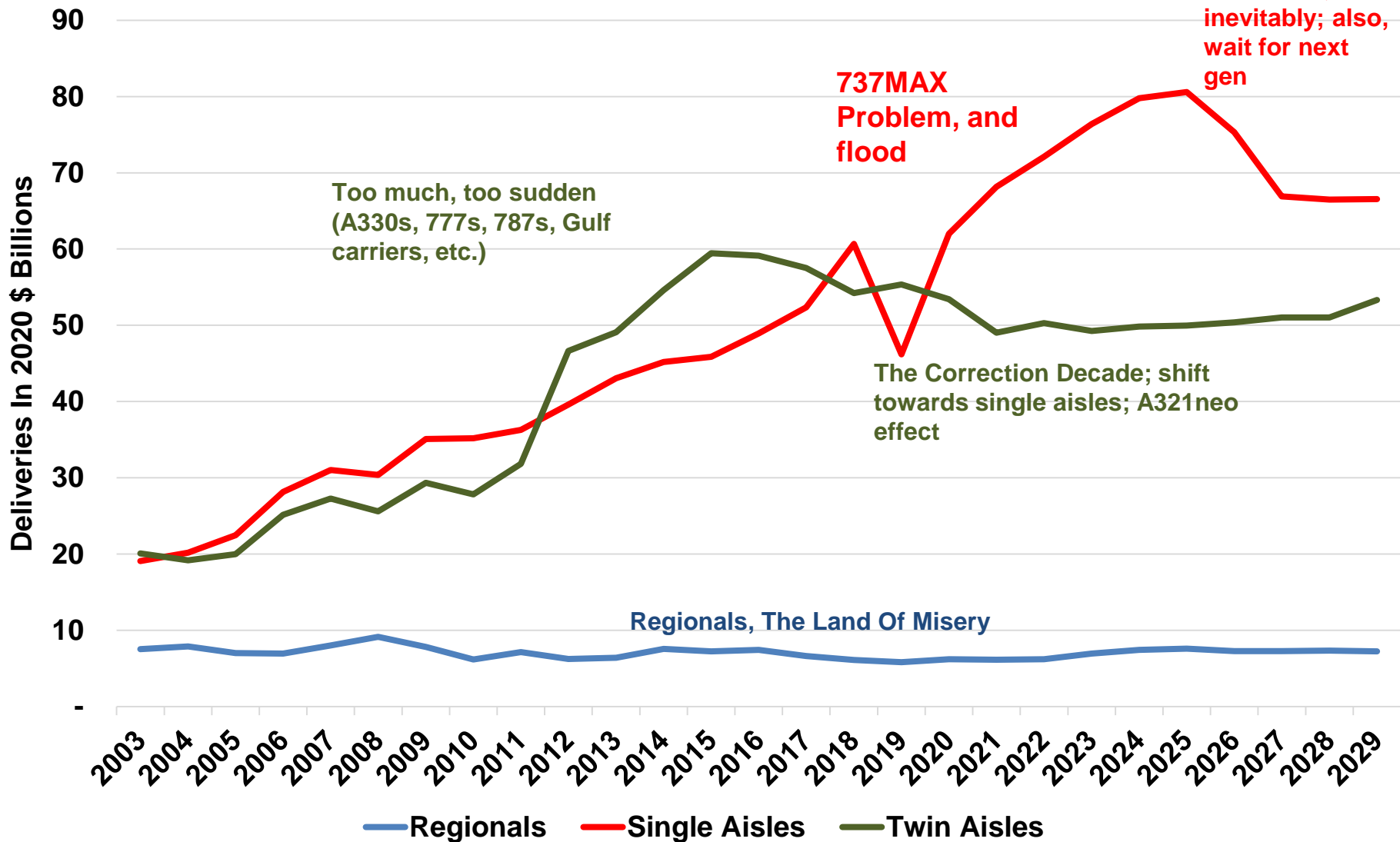
## Growth May Not Resume For A Few Years



# Large Jetliner Orders And Deliveries Book-To-Bill No Longer A Thing



# The Air Transport Market By Segment (As of January)



Some kind of correction, inevitably; also, wait for next gen

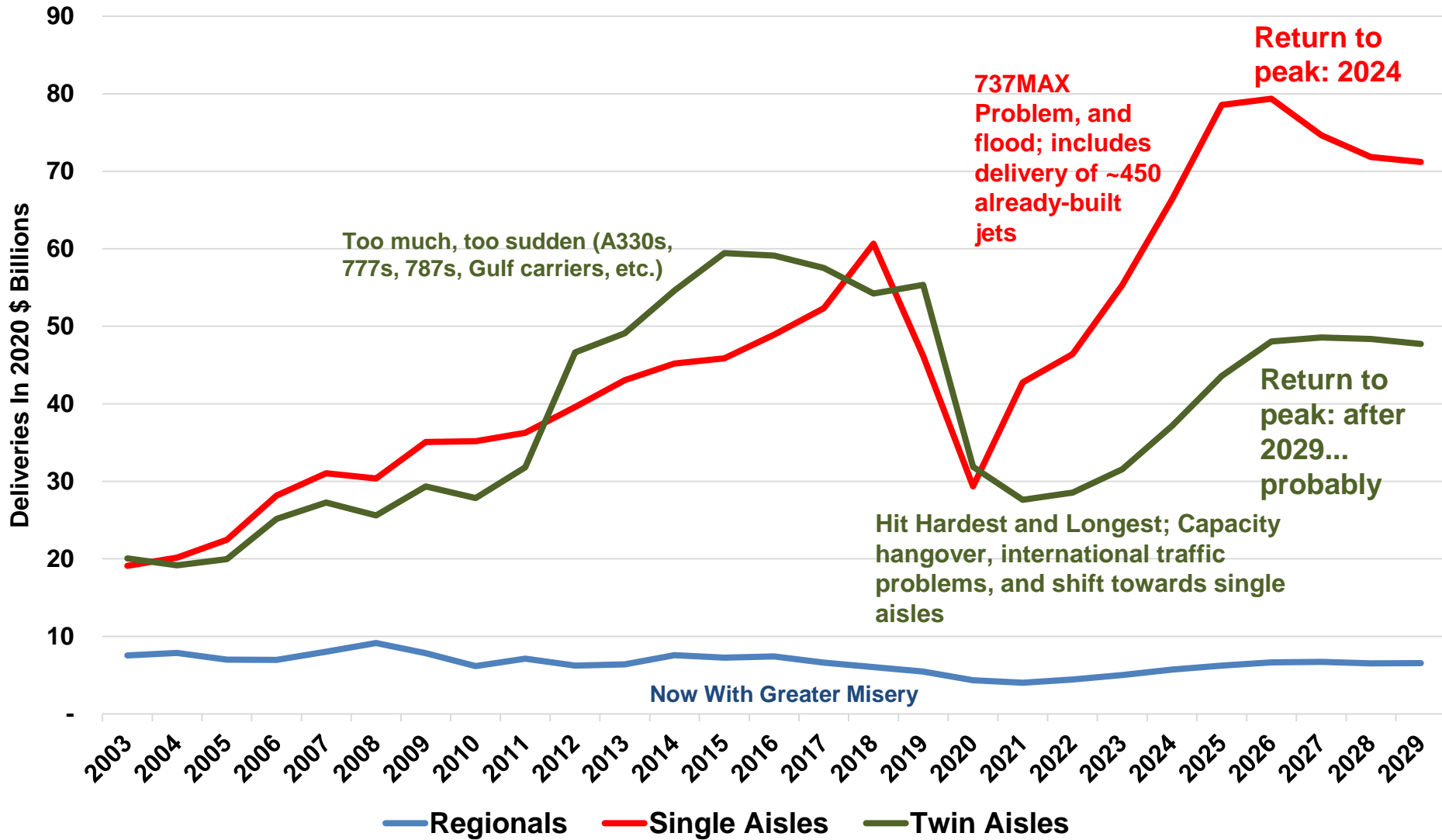
737MAX Problem, and flood

Too much, too sudden (A330s, 777s, 787s, Gulf carriers, etc.)

The Correction Decade; shift towards single aisles; A321neo effect

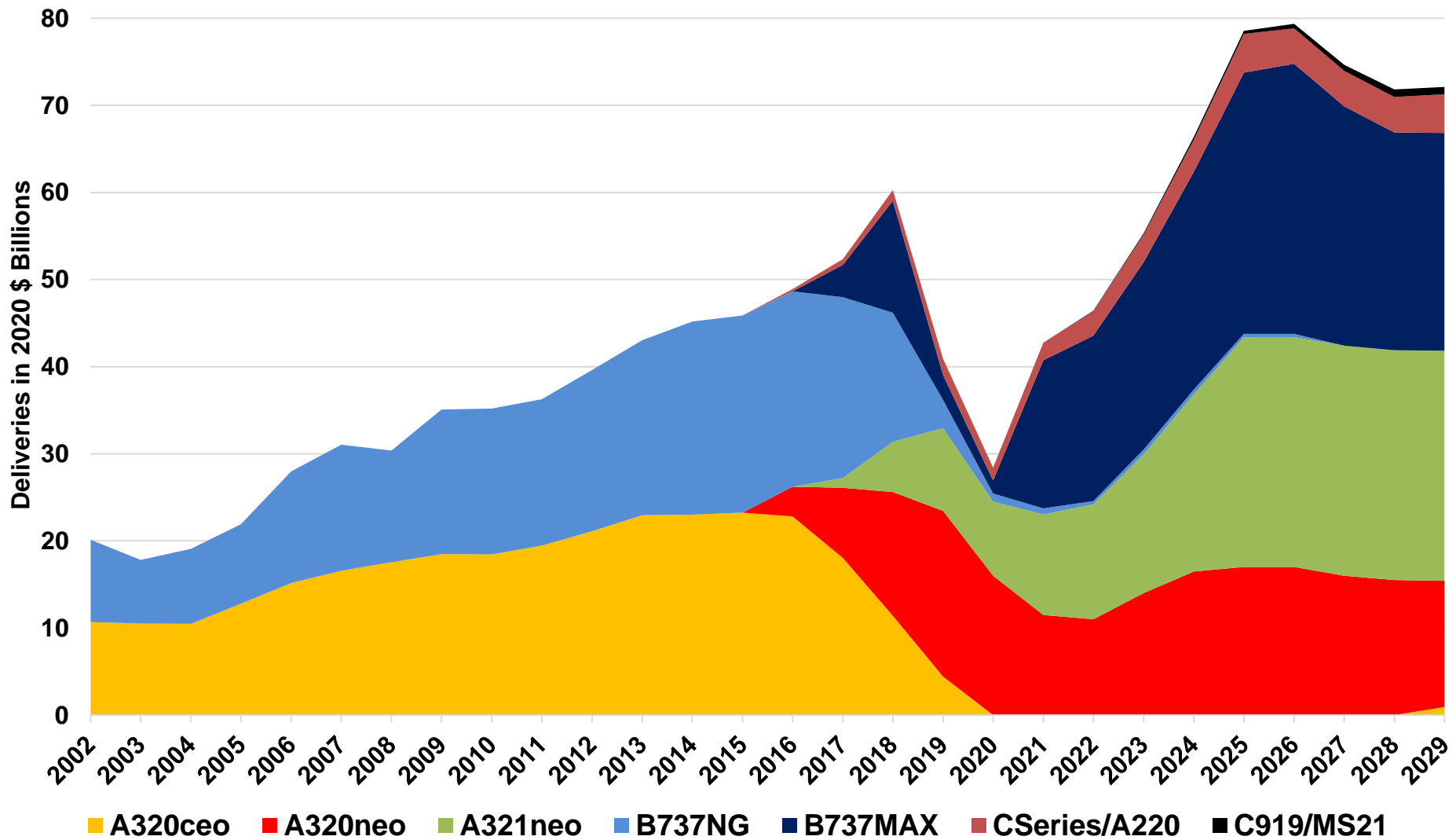
Regionals, The Land Of Misery

# The Air Transport Market By Segment (August)

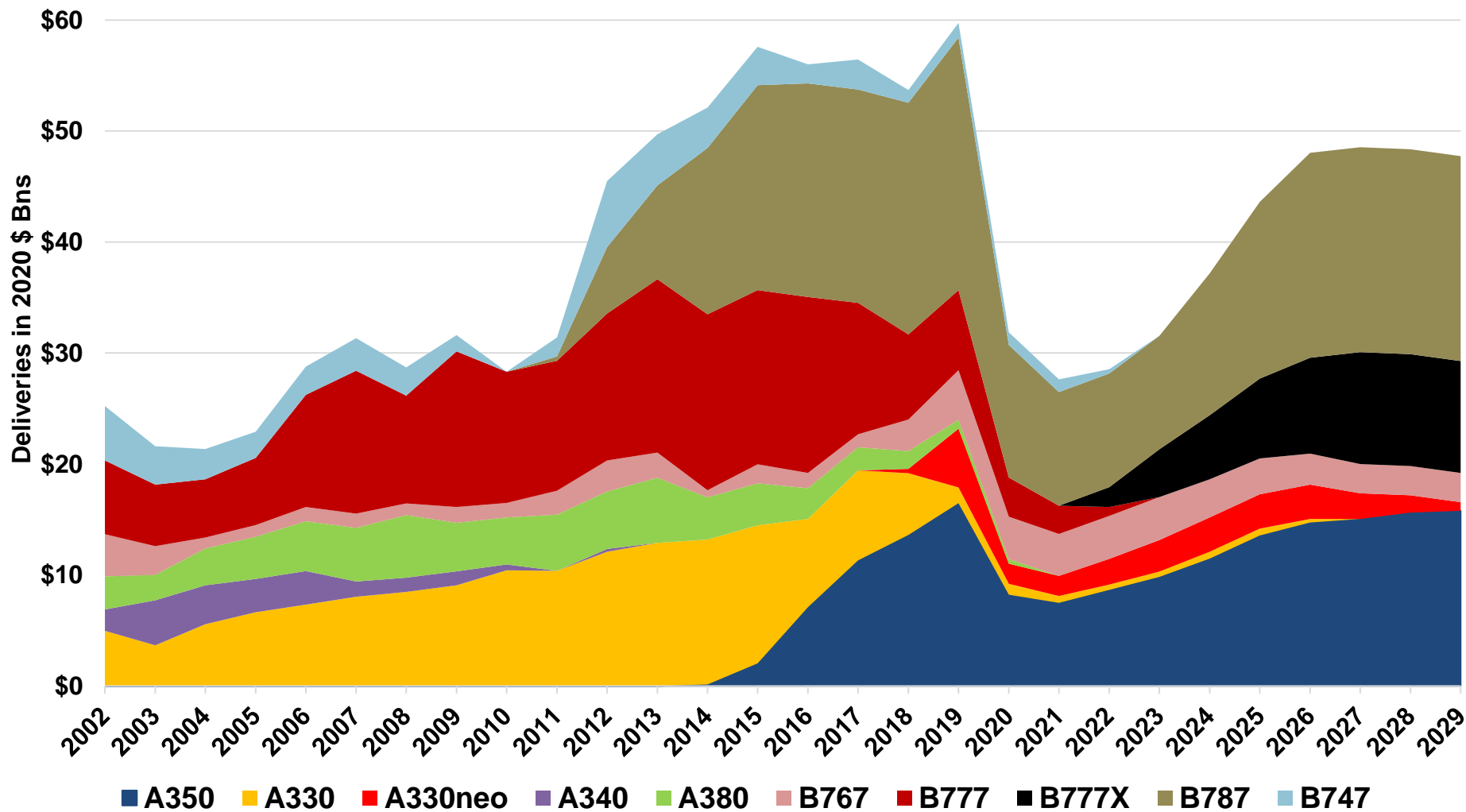




# Single Aisle Deliveries: : Protected By MAX Return, and By Shift Away From Twin Aisles



# Twin Aisles: Formerly Hot; Now Crowded And Depressed

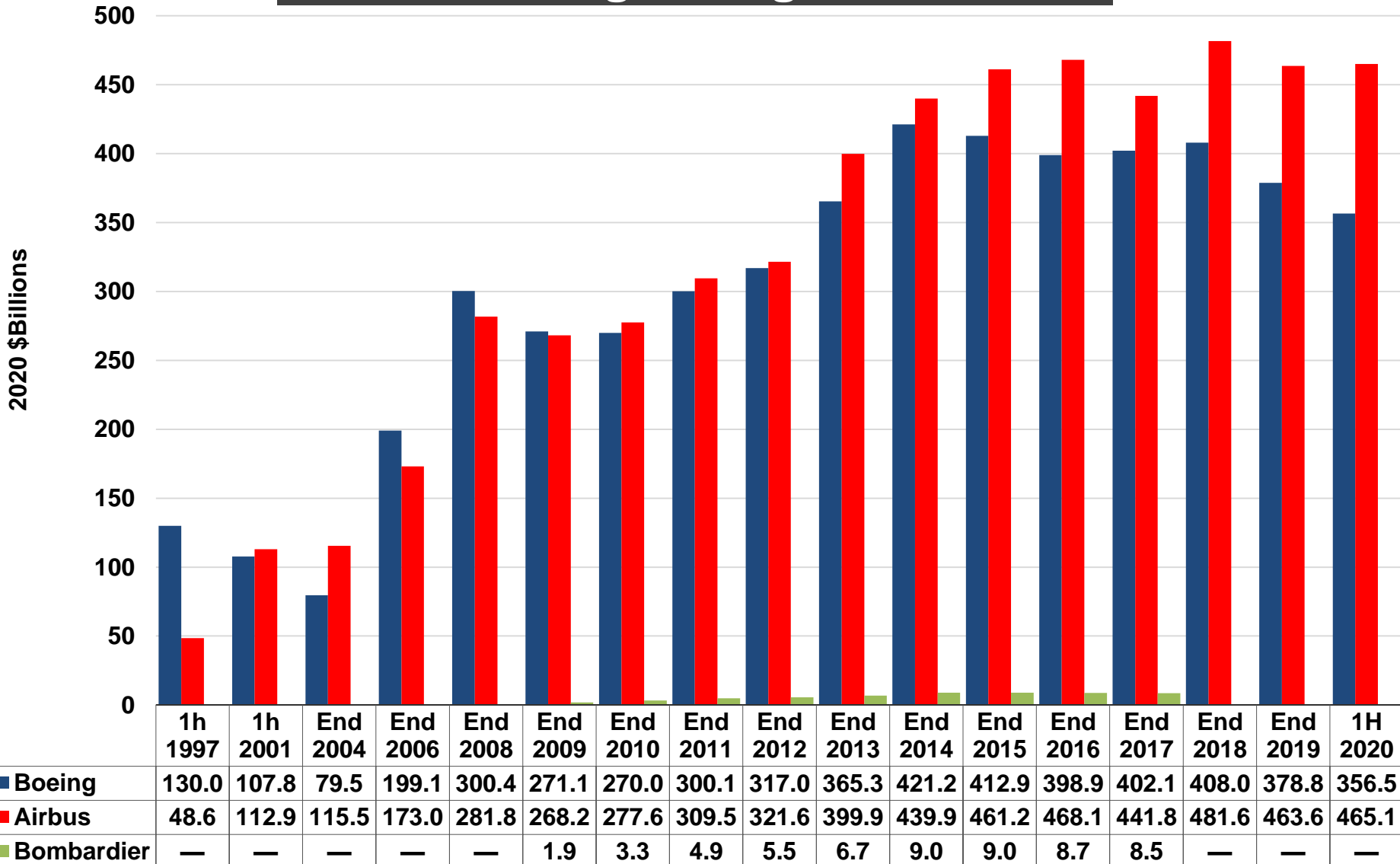


# Jetliner Types And Fleets

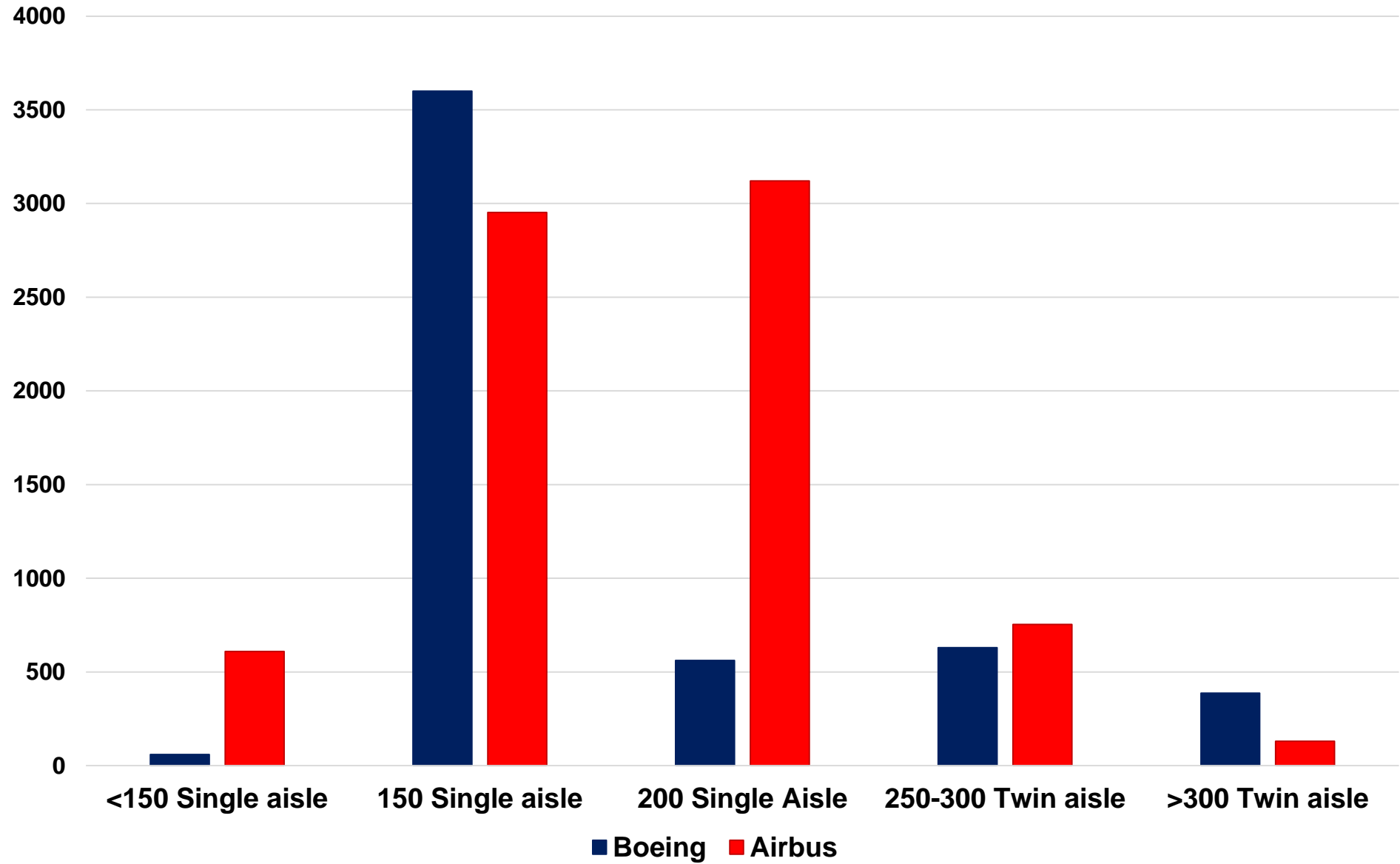
## *Trends And Themes*

- **Downsizing trend: demand for jets offering equivalent functionality and equal/better economics, fewer seats, than older models.**
  - Thus, A321neo will do well as replacement for older, mid-range twin aisles; A220 will do well as replacement for older 737s and A319/320s.
- **Boeing single aisle product line now boxed in; MAX8 fine, but outflanked from above and below.**
  - A321neo increasingly dominant in 180/220-seat segment; CDB MAX10 order conversion further indication that larger MAXs uncompetitive.
  - Embraer JV termination means Boeing abandoning 100/130-seat segment.
  - BA 25% R&D cut announced in 1Q call not a good sign for product development.
  - MAX8 lease rates, orders (particularly lessor orders) also taking a hit.
  - Boeing, in short, is therefore at risk of losing out due to airline downsizing.
- **E-Jets will lose market share and/or profit without a large partner against A220, but E175 might control its segment.**
- **A330neo increasingly at risk of MD-11-like fate.**
- **Almost all remaining quadjet fleets look set to retire young (1/3 of 380 fleet so far).**
- **Large twins (777X, A350-1000) look marginal for most of decade.**

# Firm Order Backlog Values (July 1): Boeing Taking A Hit

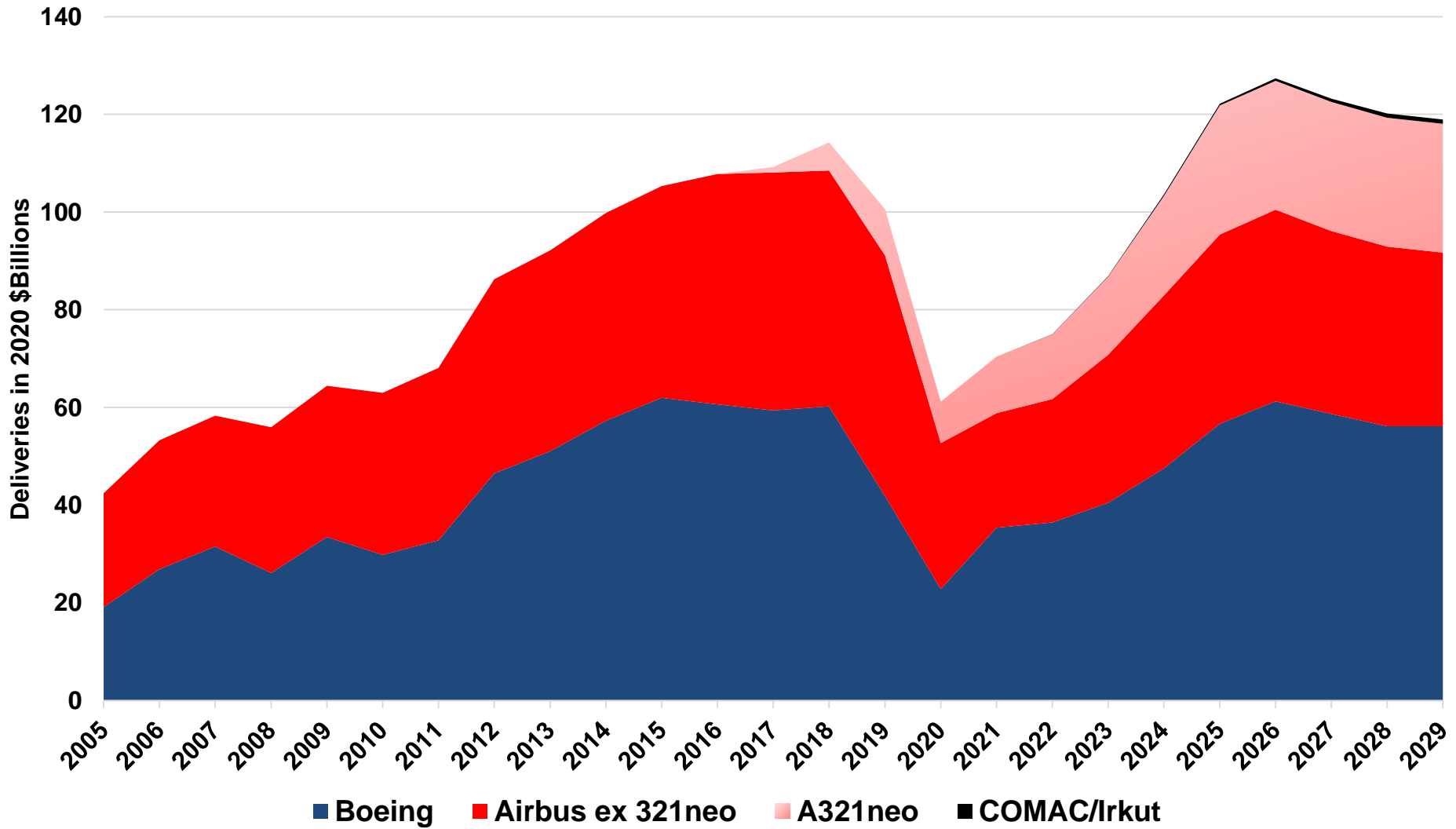


# Airbus, Boeing Jetliner Backlogs (July 1)



# Jetliner Market Shares By Deliveries

## Airbus Seizes The Middle Market and First Place; Covid-19 Accelerates shift to Middle Market



# Embraer JV Fallout

## *Winners, Losers, Questions*

- **Winners**

- Airbus.
- Mitsubishi, unless they decide to exit.

- **Winner/Loser**

- Boeing.
  - Lose: Airbus wins 100/130-seat segment, KC-390 cooperation in danger.
  - Win: \$4 bn instant liquidity boost, no worries about optics if USG aid needed.

- **Losers**

- Embraer jetliners. But E175 might now be in a very strong position, and faces no competitive threat from Airbus.

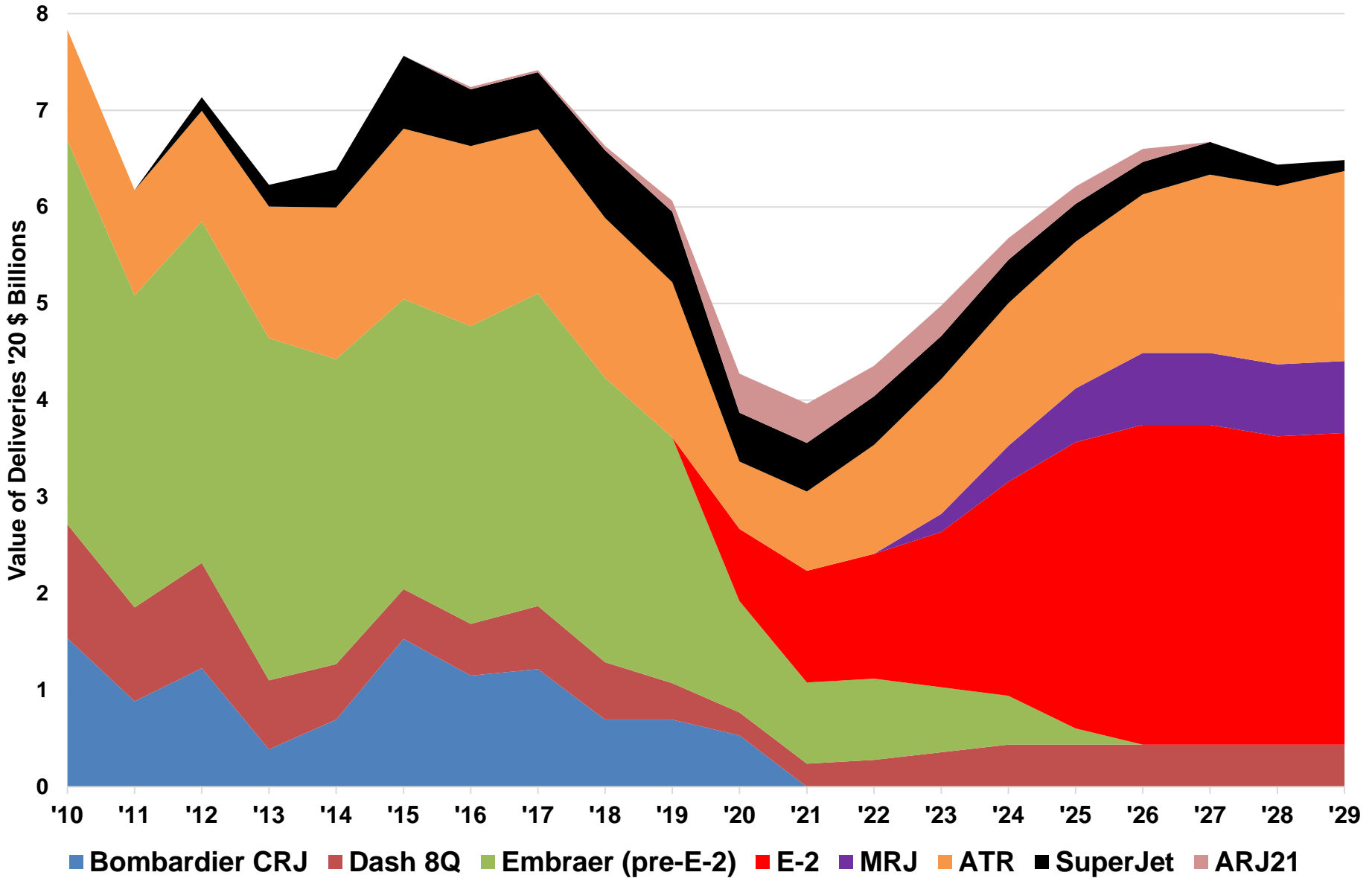
- **Big Questions**

- Props: Viking's future? New ATR? New E-3? Anything else new?
- State aid for Embraer?

- **Biggest Question**

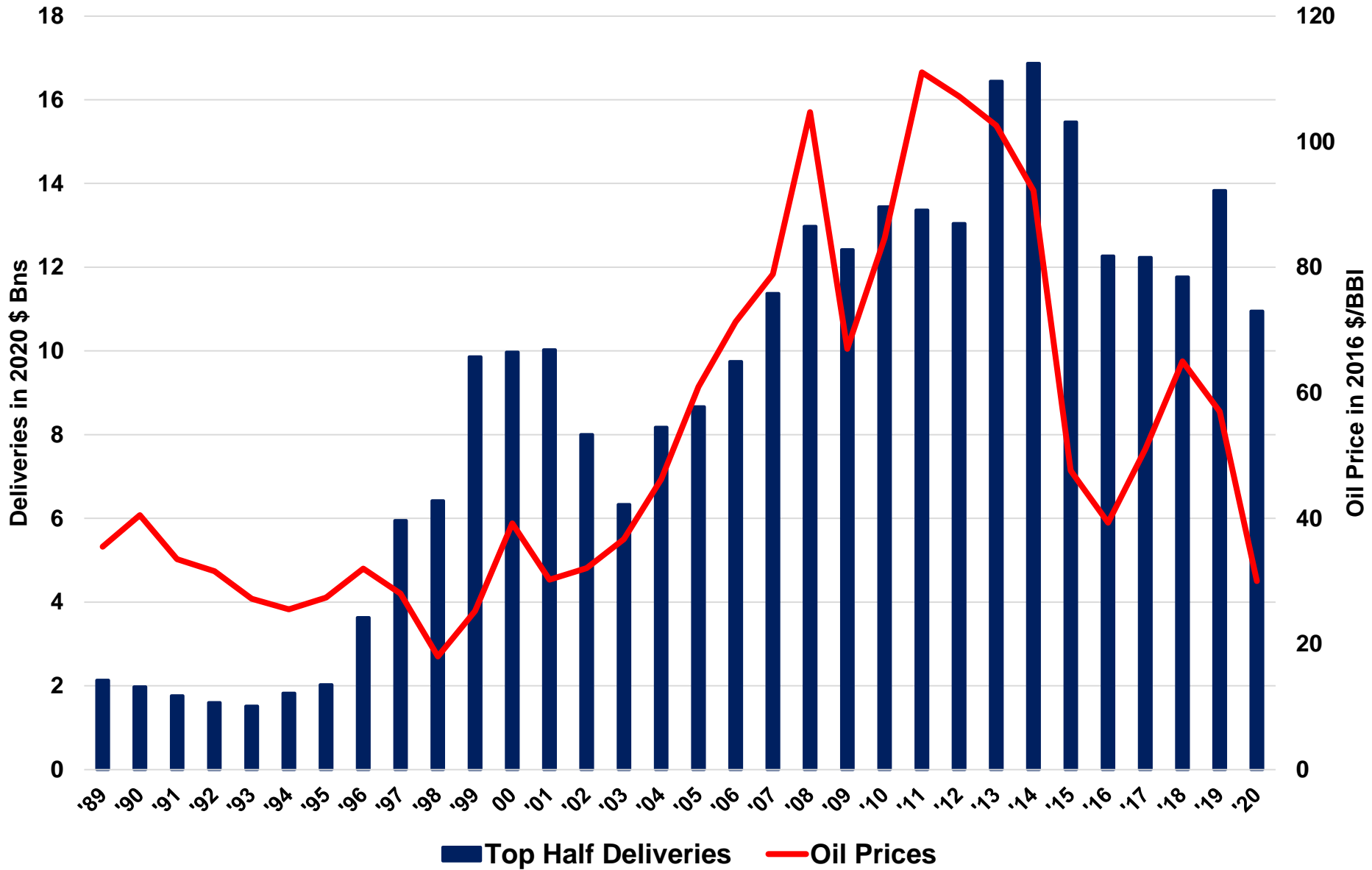
- About Embraer's future...hard to see anyone but Boeing as an acquirer, but smaller partners possible on specific programs.

# Regional Deliveries By OEM (Value)

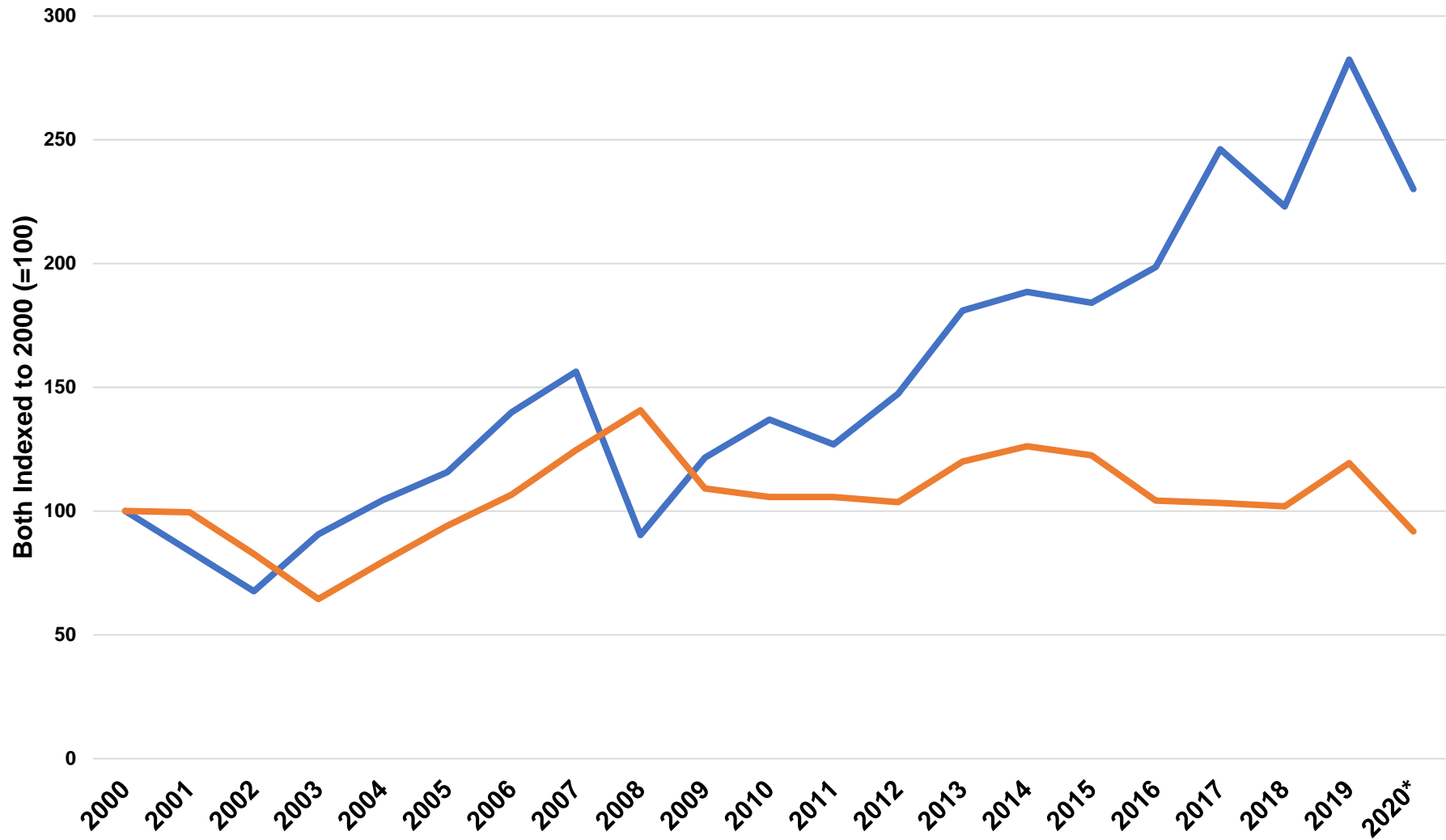




# Oil Prices And Top Half Jet Deliveries



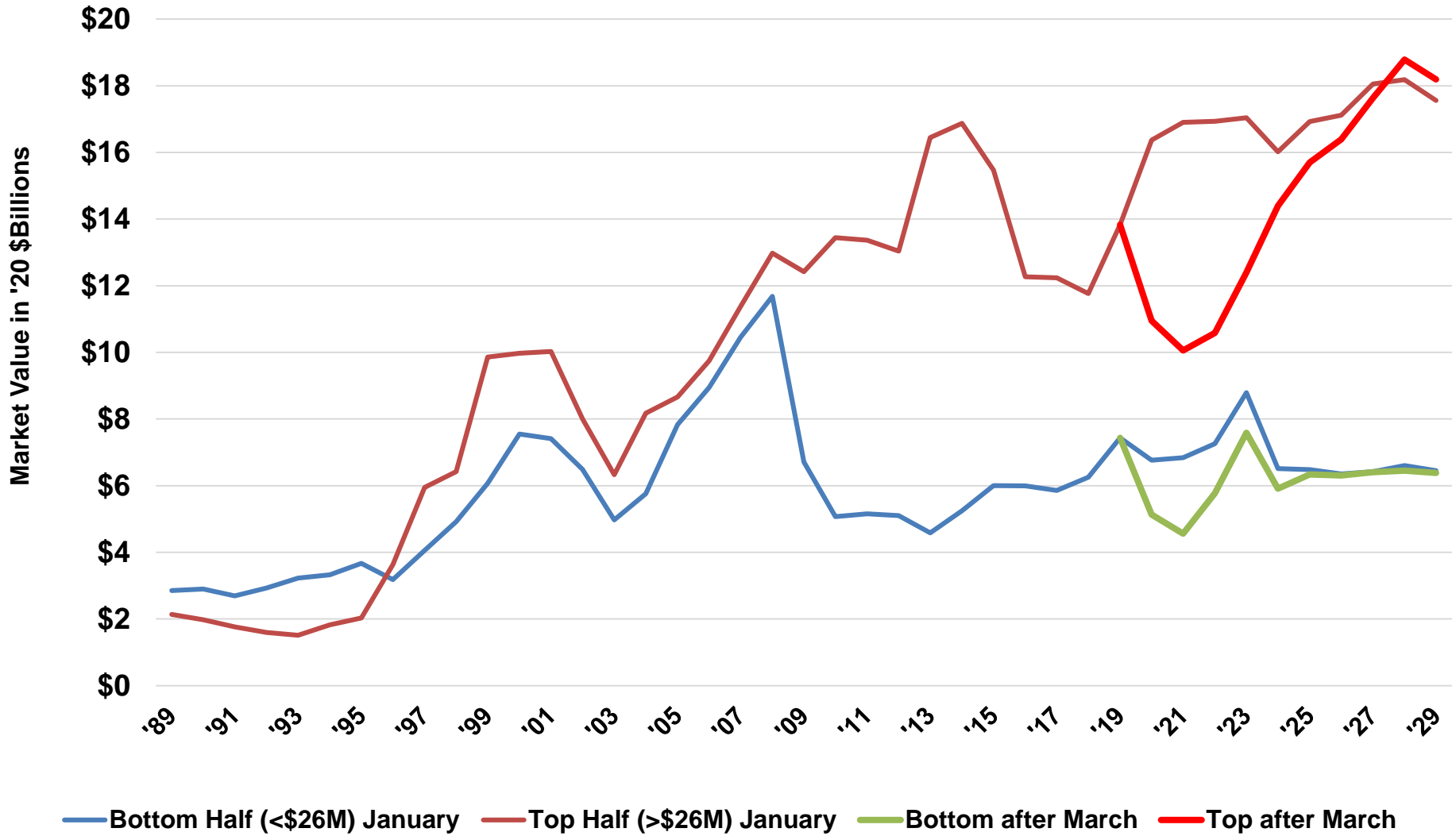
# Market Has Lagged Global Equities For Last Decade, But A Downturn Will Still Hurt



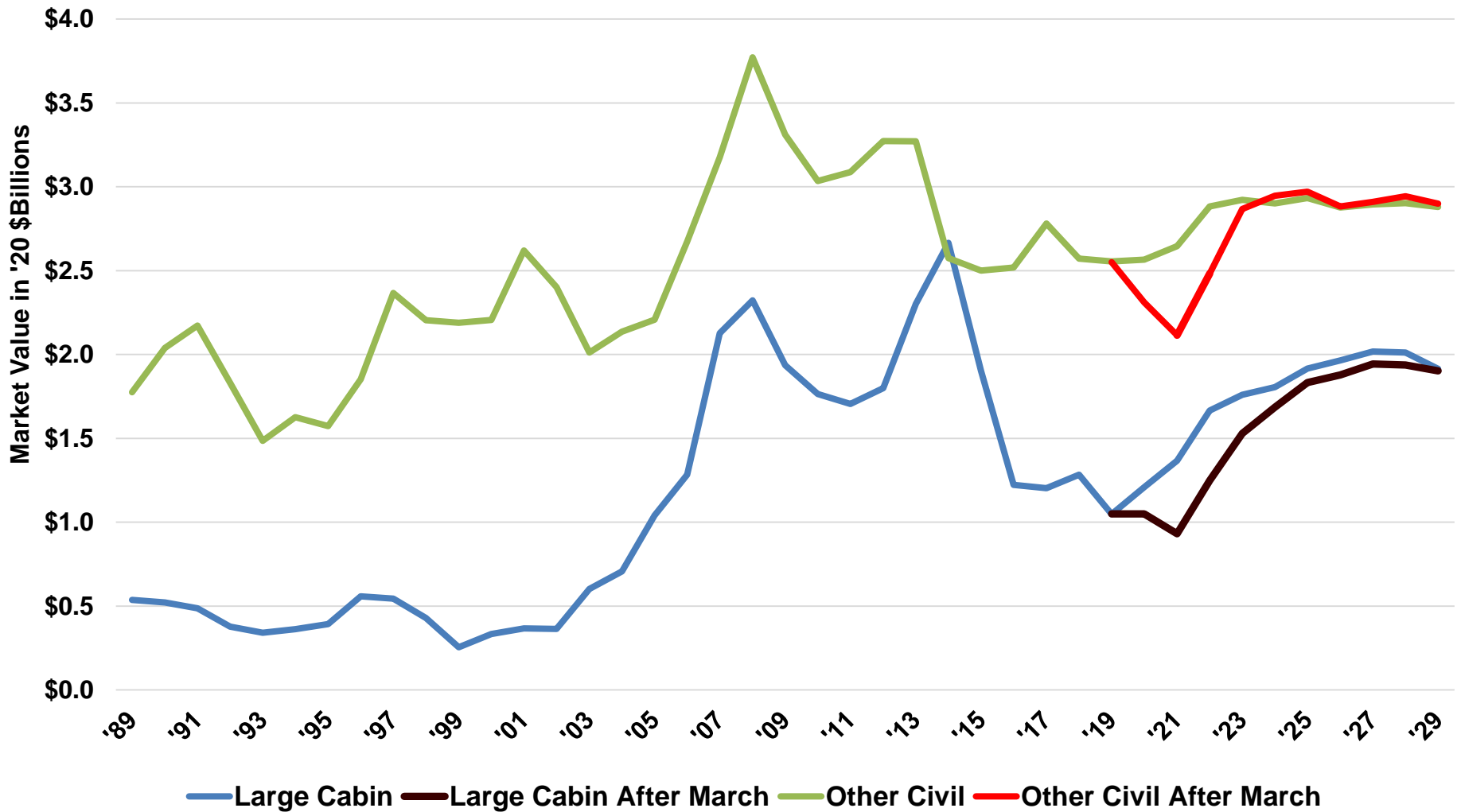
ACWI is a global equity markets index;

— MSCI ACWI      — Market Value

# Bottom Half Bizjet Segment vs. Top Half



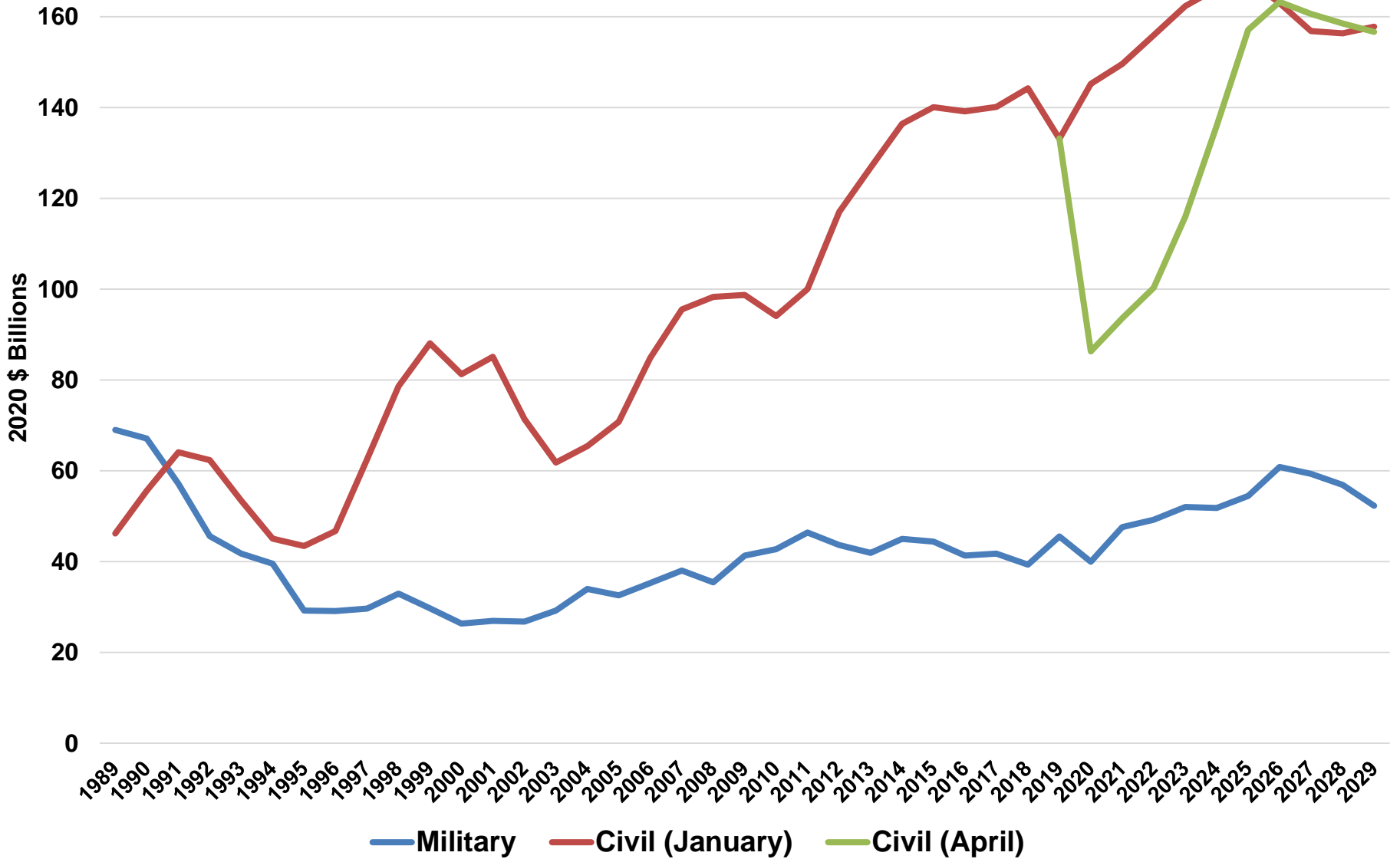
# Civil Helicopter Demand May Worsen For Large Models, Depending On Energy Prices



# Global Aircraft Market Outlook In One Page

<u>Segment</u>	<u>2020</u>	<u>'20-'21</u>	<u>Risk</u>	<u>Elevator Comment</u>
<b>Jetliners-SA</b>	<b>-36.5%</b>	<b>45.7%</b>		Includes some already-built MAXs. Watch China, fuel, traffic.
<b>Jetliners-TA</b>	<b>-42.4%</b>	<b>-13.3%</b>		Overcapacity, slow international recovery, secular shift to SAs
<b>Regionals</b>	<b>-20.6%</b>	<b>-7.2%</b>		No Boeing supply chain effect on E-2; Scope clause de-risked, but little growth.
<b>Business Aircraft</b>	<b>-22.4%</b>	<b>-7.9%</b>		Another hit after many false starts over a disappointing decade.
<b>Civil Rotorcraft</b>	<b>-11.0%</b>	<b>-5.7%</b>		Large civil hit again. Too many new models aimed at a weak segment (oil/gas).
<b>Military Rotorcraft</b>	<b>-4.9%</b>	<b>2.3%</b>		Programs end/slow; no risk of accelerated downturn; FVL beyond forecast, exc FARA.
<b>Military Transports</b>	<b>-29.5%</b>	<b>4.7%</b>		A seriously underperforming market.
<b>Fighters</b>	<b>-17.2%</b>	<b>37.2%</b>		I like this market. F-35 (after COVID disruption), plus strong Gen 4.5
<b><u>All Civil</u></b>	<b><u>-35.1%</u></b>	<b><u>8.4%</u></b>		SAJetliner snapback due to MAX, weakness in other segments; more overcapacity risk.
<b><u>All Military</u></b>	<b><u>-12.3%</u></b>	<b><u>19.1%</u></b>		Global insecurity, Tension, Malice. Special mission also boosts topline.
<b><u>Total Industry</u></b>	<b><u>-29.3%</u></b>	<b><u>11.8%</u></b>		<b><u>No strong recovery until 2023</u></b>

# World Aircraft Deliveries By Value, 1989-2029



# Believe It Or Not...

## *There's Good News If You Look Hard Enough*

- **A much bigger industry and market – % v. numbers.**
- **An airline paradise, except for the traffic.**
  - **Fuel, Jet costs, Crew costs, interest rates, government support (for most, and for now).**
  - **Stimulate traffic, or restore profit?**
- **Defense: budgets and export demand.**
- **Defense: industrial support.**
  - **Companies: all about balance.**
- **Financial sector stronger going into this crisis.**
- **Less business jet frothiness.**
- **Globalization redeemed. Different, but redeemed.**

# COVID-19 And Civil Aviation Markets

For more information about Teal Group:

[www.tealgroup.com](http://www.tealgroup.com)

Tom Zoretich

Senior Economist

[tzoretich@tealgroup.com](mailto:tzoretich@tealgroup.com)