COVID-19 And Military Aerospace Markets

The Closest The Industry Has To A Safe Haven

June 8, 2020

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Defense: Overall

- Defense still defensive.
  - Generally a safe haven, for investors, and for suppliers.
  - For both, and for primes, it's all about the civil-military ratio, and for this crisis, higher military exposure is best.
  - Primarily true for US; export markets and Europe may be another story due to greater fiscal conservatism.
- Production pauses unlikely to be a major disruption.
  - Italian, Japan F-35 FACOs open again; LM guidance now calls for 117-124 deliveries in 2020, down from 141 plan.
  - Workforce protection/prioritization could remain issues for months ahead.
- Since COVID, new programs, export orders continue to arrive.
  - USAF MQ-9 replacement; New Zealand: five C-130Js.
- Few signs of serious defense budget cuts worldwide; South Korea only significant example.
- DoD payment accelerations important, particularly for suppliers.
  - Progress payment rate increase: 95% of cost from 90% for small business.
- DoD also got $688 mn for defense suppliers in CARES act.
- <u>However: measures planned by DoD and others do not account for the likely scope of the commercial jetliner downturn, and its likely impact on supplier companies.</u>

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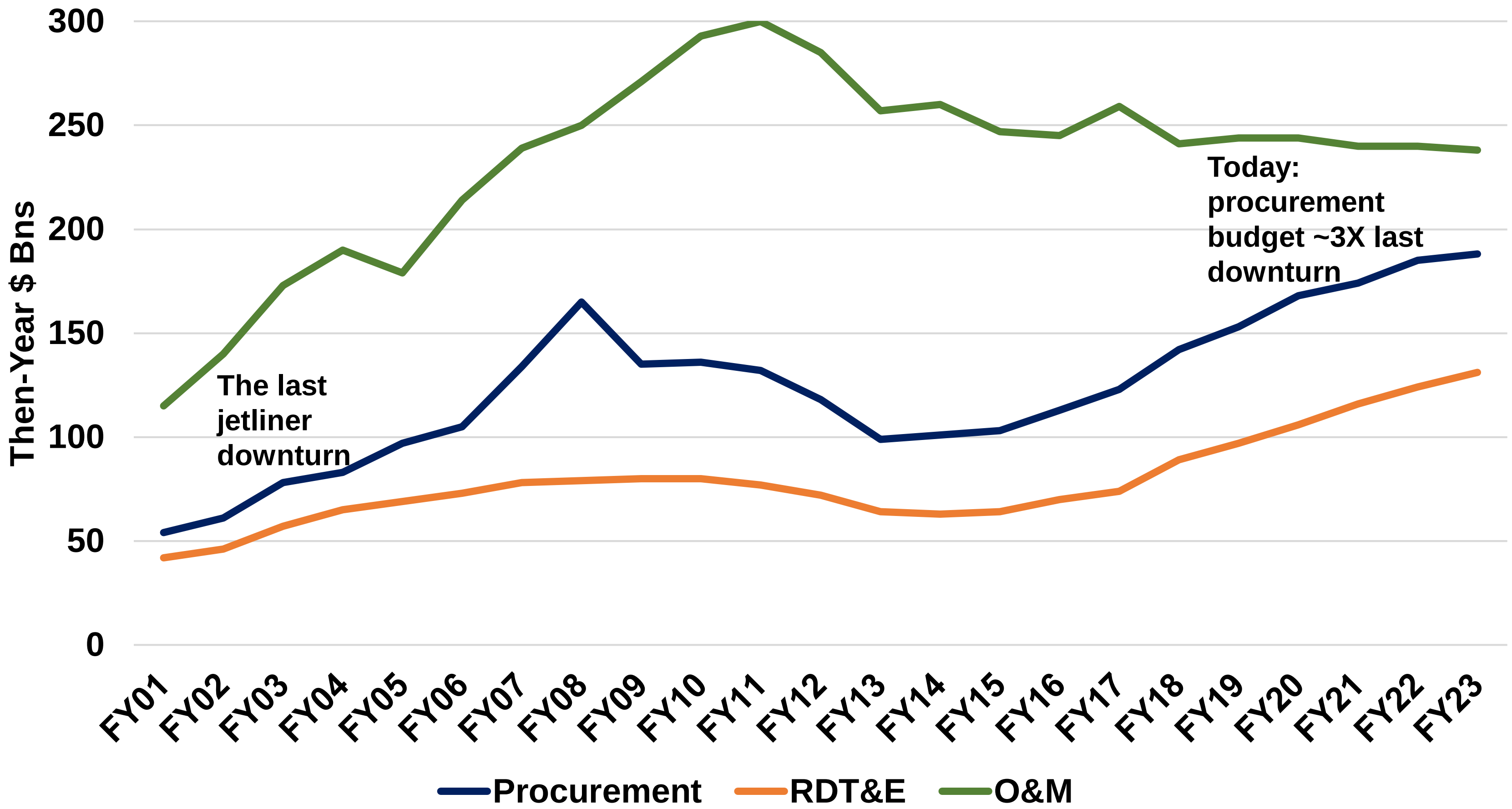
Defense: Budgets

- **Defense budgets linked to threats, perception of threats, and domestic politics, not macroeconomics.**
  - **Stimulus packages in the trillions; Trump administration budget requests have $1 trillion deficits; in this context $150-200 billion procurement budget not a major concern. Budget hawks rare in DC today.**
  - **However, deficit spending and overall debt loads getting into uncharted territory; this might start pressuring discretionary budgets (including defense) down in a few years.**
  - **Defense cash could also be re-prioritized for medical research and facilities.**
- **Strong temptation to use defense procurement as part of broader stimulus spending package.**
  - **“Shovel-ready” procurement programs will benefit at expense of R&D and new-start procurement.**
- **Europe is another story.**
  - **More resource constrained; unlike US, national defense budgets historically viewed as bill-payers in times of economic crisis.**
  - **Big problem with national/regional defense sovereignty if next-gen programs not funded at this point.**
  - **EU proposed €8 bn fund for joint weapons development/acquisition.**
- **Some key export markets linked to resource prices.**
  - **Some insulation from sovereign wealth funds, but if oil stays cheap Saudi and Gulf State orders will diminish.**

DoD Investment: Plateauing After A Boom, And Dwarfed By COVID-Related Stimulus Packages



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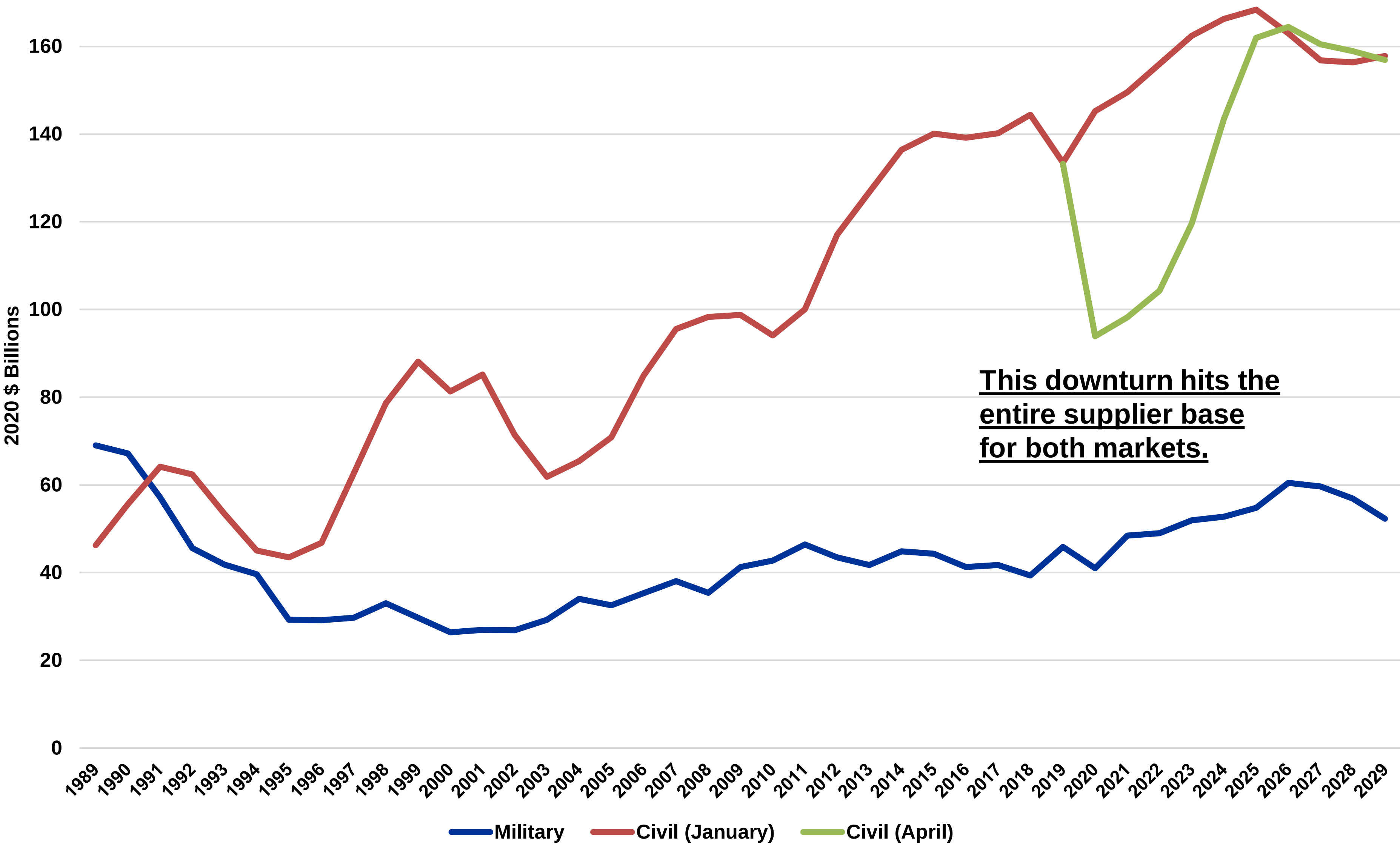
Defense: Companies

- Pure-Play defense primes in best shape.
  - Lockheed Martin, Northrop Grumman, with little civil work, better positioned in crisis than General Dynamics (Gulfstream) and (especially) Boeing.
  - Raytheon finalized its merger with United Technologies, a union that will dramatically increase its commercial business.
- Supplier companies generally in worse shape due to civil exposure; smaller companies already facing liquidity issues, particularly at third and fourth tier.
  - To deal with the cash flow crunch, companies with heavy civil exposure will be forced to cut discretionary expenditure and to lay off workers.
  - Capital spending on new plant and equipment likely to be cut. Long-term R&D will suffer in favor of research with more immediate payoffs.
  - Companies with existing programs better placed than those seeking next generational programs. With Congress concerned about jobs, it will be especially difficult to cancel or cut existing programs to fund new priorities.
- Mergers and acquisitions, particularly involving commercial aerospace, will become more uncertain in this environment.
- Companies preserving cash rather than seeking opportunities to invest it.
- <u>Defense primes and customers may be unprepared for the extent of the civil downturn, and its impact on the supplier base.</u>

World Aircraft Deliveries By Value, 1989-2029



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Markets: Aircraft

- **Primary recipient of “shovel-ready” Congressional inserts.**
  - **F/A-18E/F back out of FY 2021 budget, but stimulus dynamic helps ensure Congressional inserts.**
    - **In theory, cash will go to F/A-XX; we expect some, if not all, to be diverted back to F/A-18s.**
    - **F/A-18 set to benefit from German Tornado replacement plan.**
  - **Helps F-15EX stay in budget, and F-35 too.**
  - **C-130J may benefit too.**
- **FVL at risk, particularly FLRAA.**
  - **CH-47F Block II likely beneficiary, along with UH-60M.**
  - **FARA may be far enough along to be safe.**
- **B-21 likely to pull through despite any political shifts.**
  - **Nuclear weapons a Republican priority; production line in blue California.**
- **European programs more at risk for budgetary reasons.**
  - **Crucial time for Tempest, FCAS due to imminent decline of current programs.**
  - **Eurofighter might be in better shape if Germany can still keep Tornado replacement plan intact.**
- **Export market damage minimal, so far.**
  - **Saudi fighter, transport procurements face additional delays.**
  - **South Korea budget cuts threaten F-35 intake, but preserve KF-X.**
  - **Croatia, Argentina fighter buys canceled, but always uncertain.**
  - **FMS generally in good shape; New Zealand C-130J buy a positive.**
  - **Increased emphasis on domestic job creation, per India’s medium fighter indigenization move**

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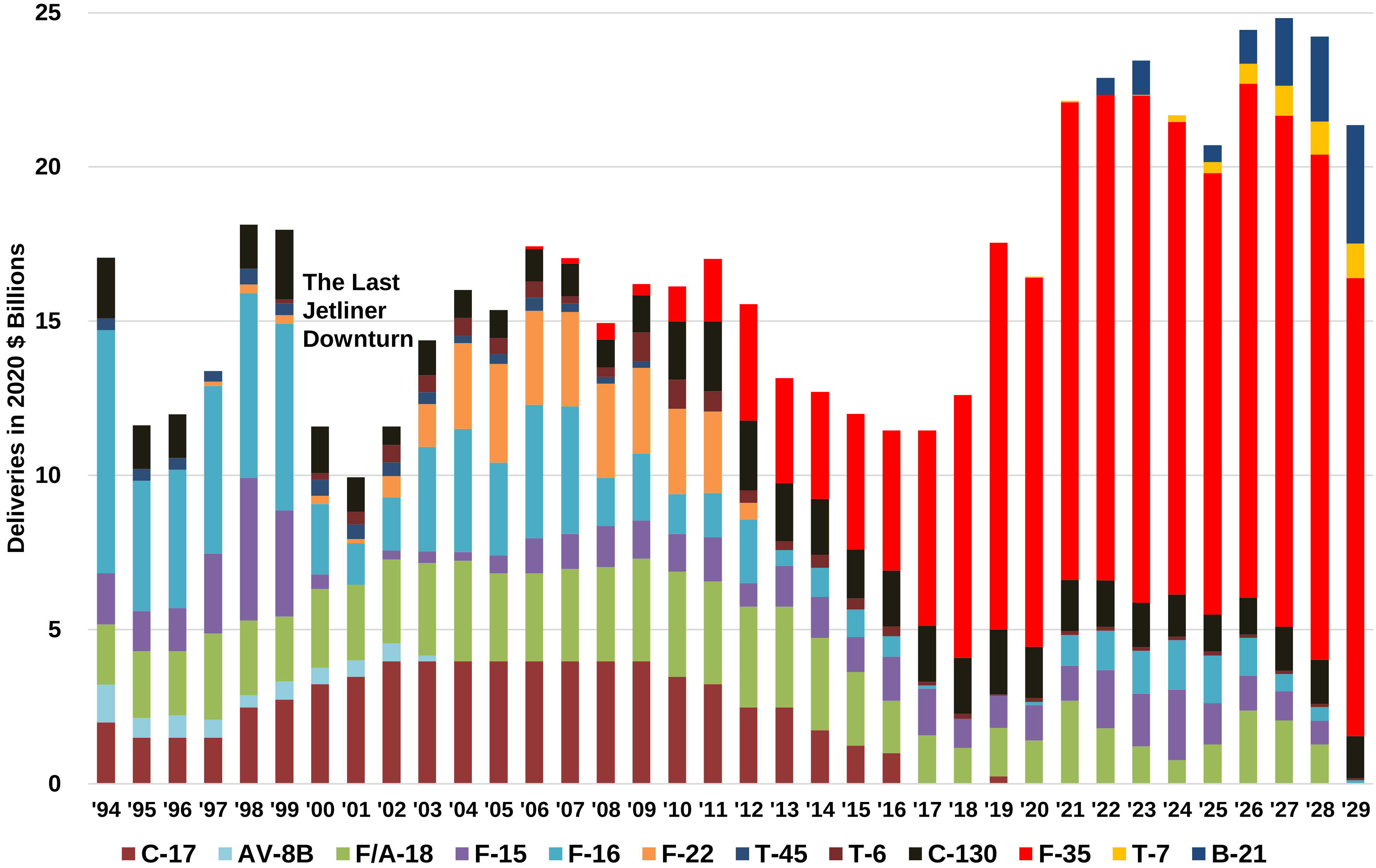
US Military Fixed Wing Aircraft Deliveries



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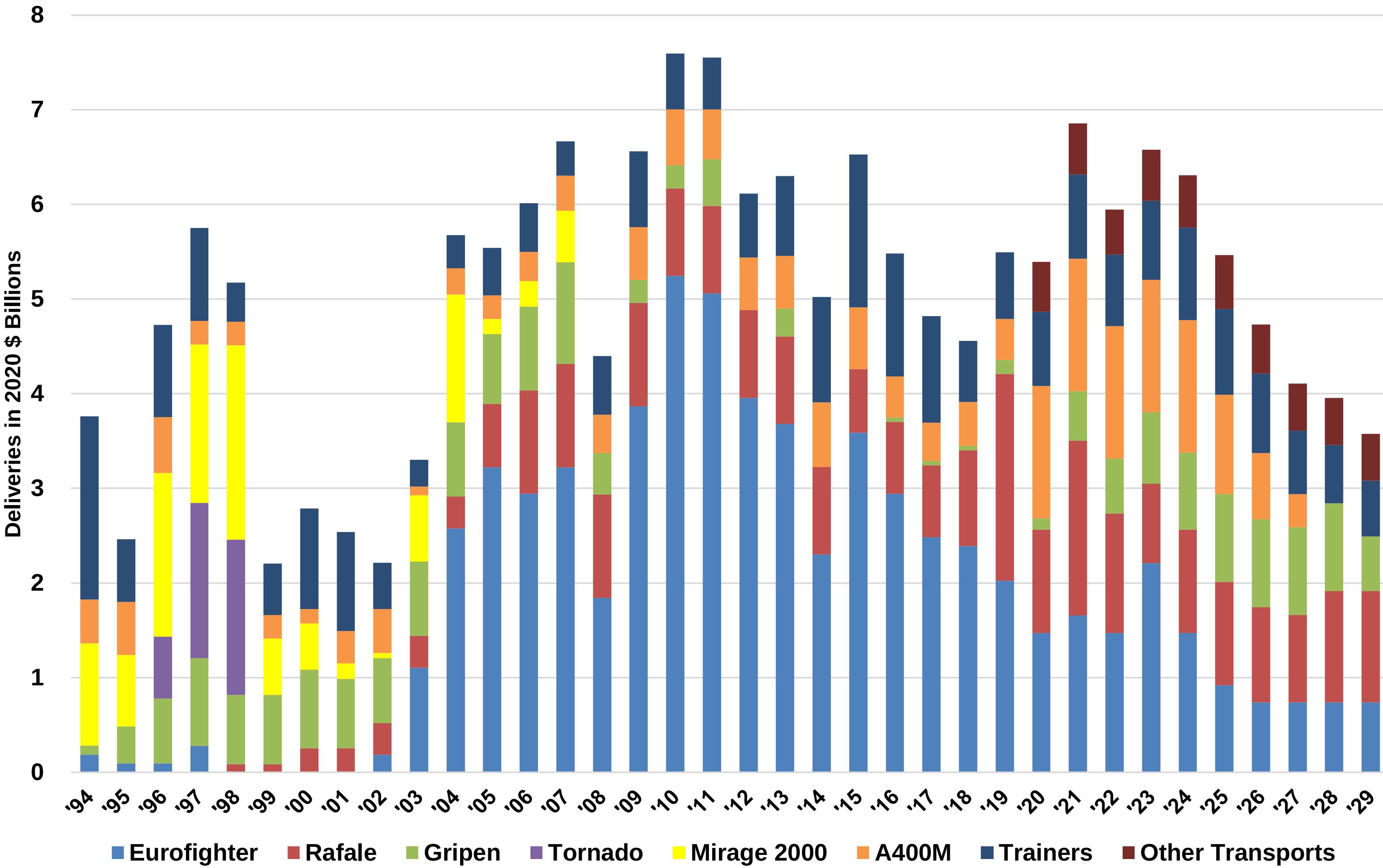
European Industry Faces A More Challenging Environment

Coping Without F-35...To A Point; New Fighter Decisions Loom Large



Defense: Utilization and Support

- **Utilization, aftermarket likely to stay on track.**
  - **De-stocking not a major prospect for military customers, unlike with commercial. Neither is USM.**
  - **Combat missions unlikely to decline; adversaries tend to exploit crises with probes and airspace incursions.**
  - **Training hours relatively inflexible.**
  - **Possible humanitarian mission flight hours uptick.**
  - **Force structures, like budgets generally linked to threats, not macroeconomics.**
  - **Some military exercises cancelled; likely to be temporary phenomenon.**
  - **If procurement levels do rise as a form of economic stimulus, possible cutbacks in major fighter upgrades (AESA, IRST, etc).**
  - **B-52 re-engining contract will boost aero engine industry in next few years (~650 engines worth over $11 billion), but most procurement orders after civil crisis ends.**

Markets: Missiles

- Missile RDT&E growth has been primarily due to the strategic shift in focus from Global War on Terror (GWOT) to focus on near-peer competitors (China and Russia). COVID-19 will reinforce this trend in short/mid-term, especially wtih China.
- This ongoing shift has led to expansion in two key areas:
  - Hypersonic/ballistic strike weapons.
    - DoD spending $2.6 bn in FY2020 on hypersonic missile R&D; plans to spend $3.2 bn in FY2021.
- Strategic nuclear force modernization (GBSD).
- 2020 elections could impact these programs if Trump loses the election or the Democrats win control of the Senate and retain control of the House.
  - Recent Democratic party positions do not favor the new generation of strike weapons since they are seen in connection with Trump's repudiation of the INF Treaty with Russia. The Democratic Party has generally been unenthusiastic about strategic nuclear force modernization.
- Since 2020 is an election year, COVID-19 impacts in the political sphere could have substantial impact in the missile sector; impacts in the UAV sector are less likely.

Markets: Civil UAS

- As companies pull back on investments in future capabilities, they are likely to refrain from beginning proof-of-concepts to examine how they can apply UAS to their operations, particularly since start-up costs can be considerable.
- Venture capital investments in commercial unmanned aerial systems (UAS) start-ups are likely to plummet.
  - There will be a flight to safer investments that pay off in a shorter time period. The FAA rule making process that would allow routine access to airspace is being delayed by test site and other closures. With many of these small start-ups unprofitable, they will find it difficult to survive lengthy delays.
- National US and developed world UAS programs unaffected.
  - State and municipal acquisitions likely impacted by budget crunch.
  - Delayed adaptation of civil UAS in emerging markets due to economic fallout.
- Within the commercial market, new UAS deployments by oil and gas companies will likely be hurt.
  - These companies have been early UAS adopters, but the plunge in oil prices is leading them to dramatically cut back future investments.

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Markets: Space

- **Government-funded space remains as safe as defense.**
  - **Budgets safe; DoD providing $150 million for the space launch industrial base under CARES; more could be provided.**
- **Northrop Grumman May $2.4 bn contract to develop Next-Gen OPIR missile warning satellites in polar orbits.**
  - **US Space Force plans to launch next-gen OPIR geosynchronous satellites (three, from Lockheed Martin) starting in 2025, polar satellites (two, from Northrop Grumman) in 2027; all five satellites deployed by 2029.**
  - **Replaces SBIRS.**
- **NASA deep space exploration budget rising 46% in FY 2021 over FY 2020.**
  - **Overall budget up 12%.**
- **SpaceX Crew Dragon launch success galvanizes overall market.**
- **Moon launch in 2024 still unrealistic, but points to solid increases in funding.**

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