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Strategic Challenges and Opportunities in the Global Aerospace and Defense Sectors

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- 1. How has the global recession affected the aerospace and defense market?**
- 2. Where are defense budget headed?**
- 3. What kind of commercial recovery are we really in?**
- 4. Are the defense & commercial markets counter cyclical or complementary?**
- 5. How can industry respond?**

- **How has the global recession affected the aerospace and defense market?**

Source: RSAdvisors analysis

Impact on A&D Industry

Commercial

- Triggered the last down cycle in commercial aerospace
- Reminded everyone that the business jet industry is cyclical
- Forced a reduction in airline seating and heavy manufacturing capacity

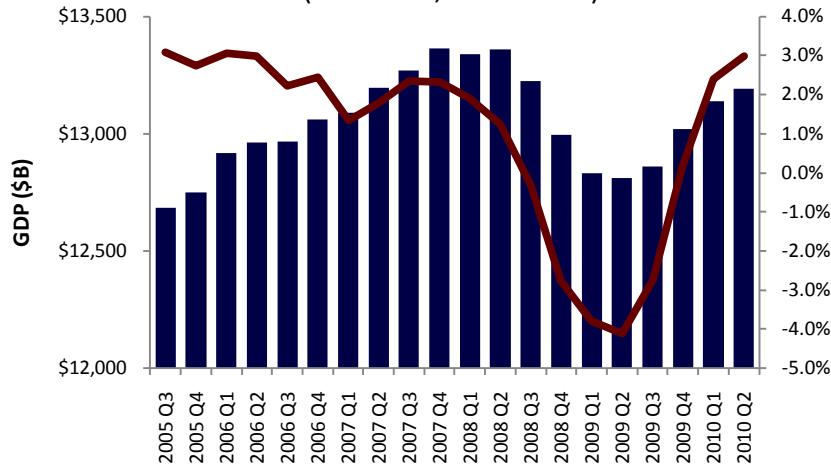
Government

- Highlighted the role governmental debt will play in steeper defense spending
- Complicated national security challenges with “whole of government solutions”
- Introduced a more benign view of near peer threats

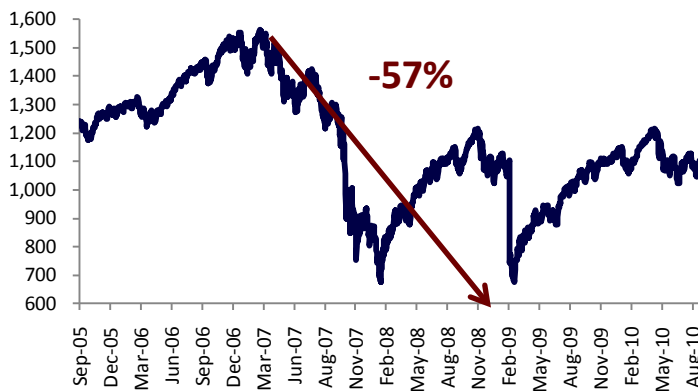
Mergers & Acquisitions

- Shifted the balance of power between strategic buyers and private equity firms

Quarterly US GDP
(in billions, 2005-2010)



S&P 500
(2005-2010)



Source: CapitalIQ, RSAdvisors analysis

Recent Changes to the Status Quo

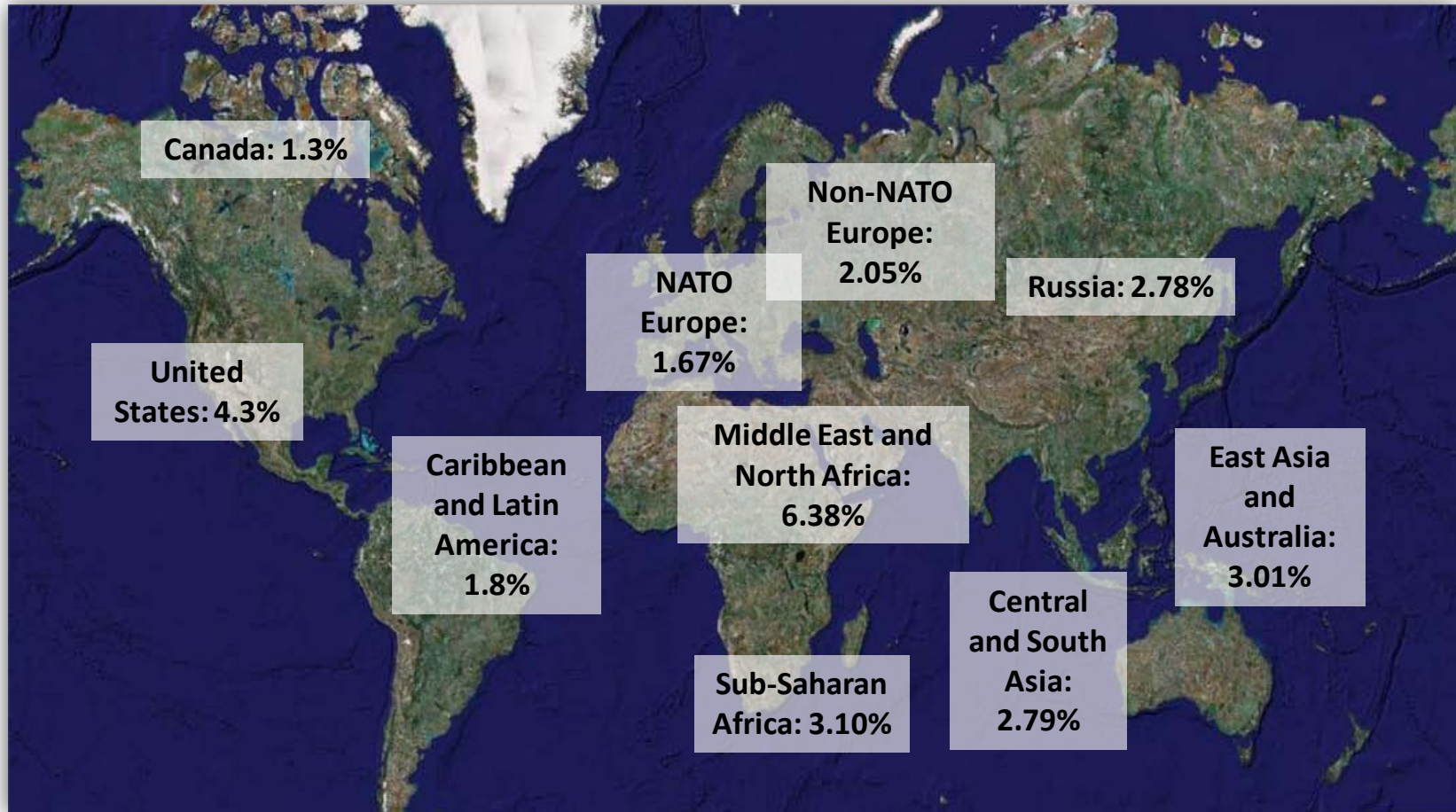
“Change”	Commercial aircraft’s recovery	China overtakes Japan as the 2 nd largest economy	For profit space exploration “takes off”
Indicator	<p>Global Commercial Jet Deliveries</p>	<p>China’s Quarterly GDP</p>	<p>SpaceX launches Falcon 9</p>
Cause	<ul style="list-style-type: none"> • Economic cycle • Aircraft age & cost 	<ul style="list-style-type: none"> • Demographics 	<ul style="list-style-type: none"> • Public policy (NOT technology)
Type of Change	Cyclical Trend	Long Term Trend	Discontinuity
Other Examples	<ul style="list-style-type: none"> • Defense budgets • Acquisition reform 	<ul style="list-style-type: none"> • Aging federal workforce • Increasing integration of economies 	<ul style="list-style-type: none"> • Technology revolutions

Source: CapitalIQ, SpaceX, RSAdvisors analysis

- **Where are defense budgets headed?**

Aggregated Percent of GDP Spent on Defense

Defense Spending as a % of GDP by Region

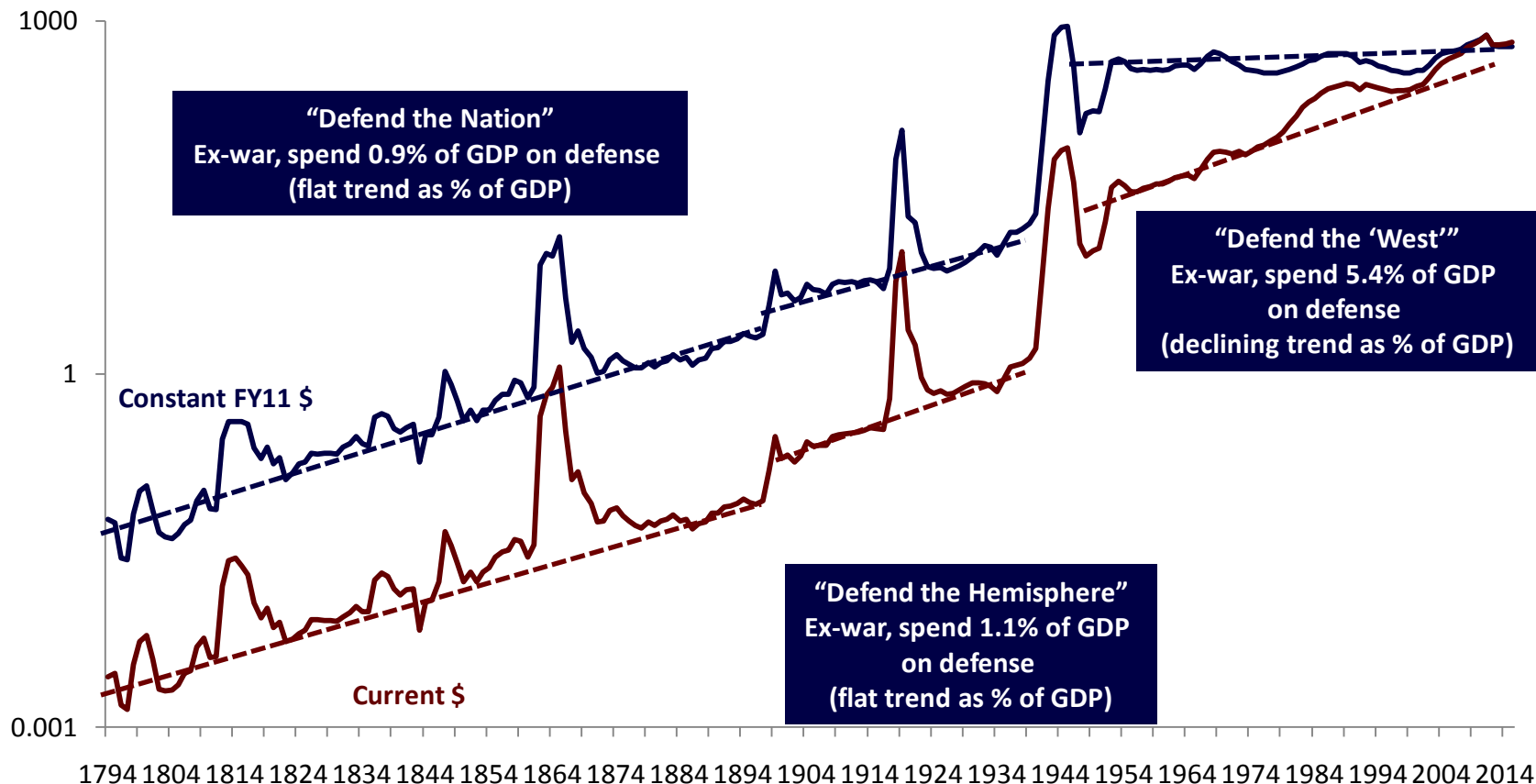


Historically nations that spend less than 3% of GDP on defense tend to face necessary tradeoffs

Source: World Bank, SIPRI

Historical US Defense Spending

Current and FY11 Constant \$ Defense Spending, 1794-2015



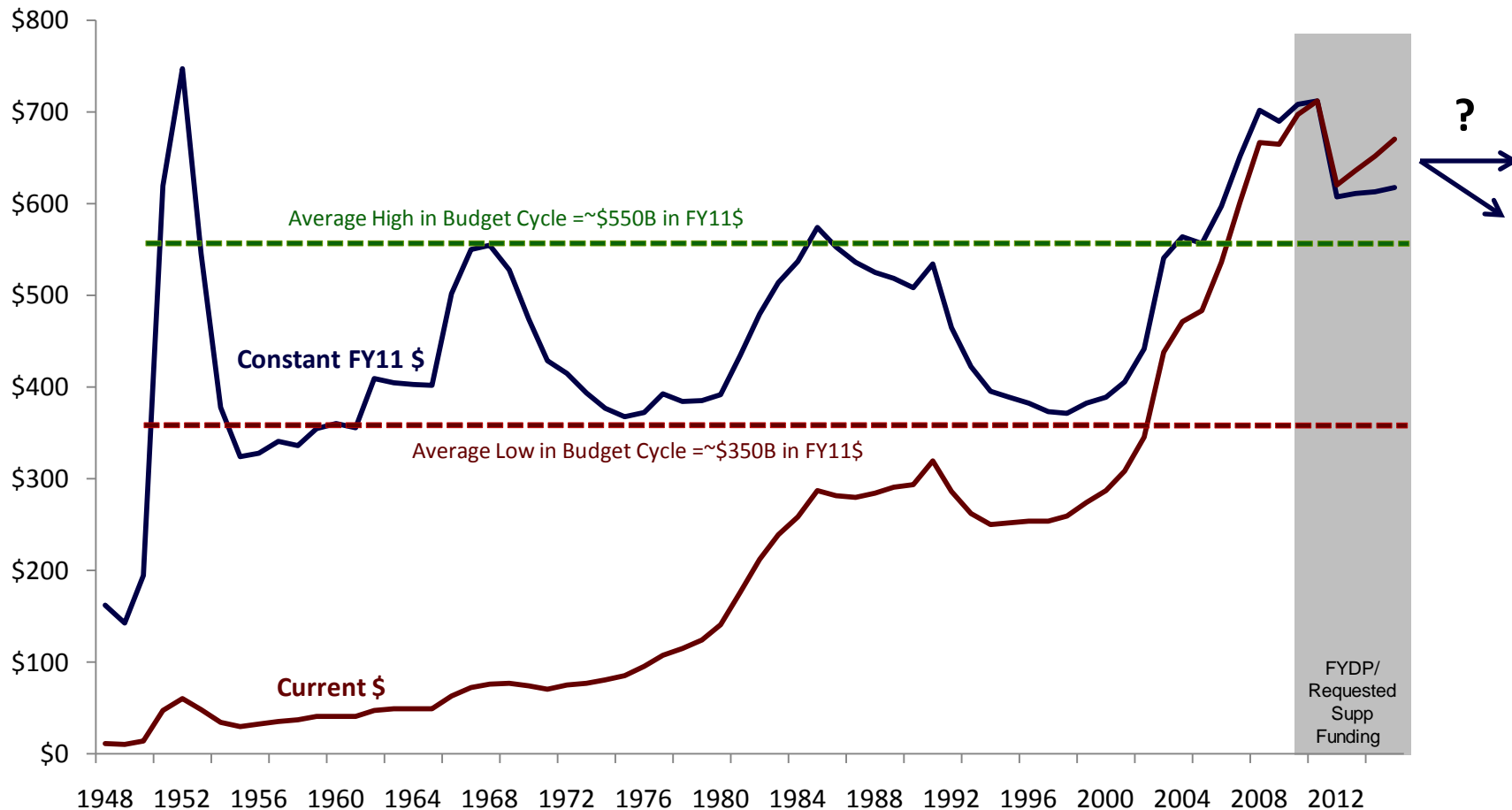
Source: US Department of Commerce, US Department of Defense, RSAdvisors analysis

Where is the US defense budget headed?

...post-WWII, we have stayed within a \$350B-\$550B "bounded range"; current wars have us above the range and begs the question...are we in a new band?

Modern US Defense Spending, 1948-2015

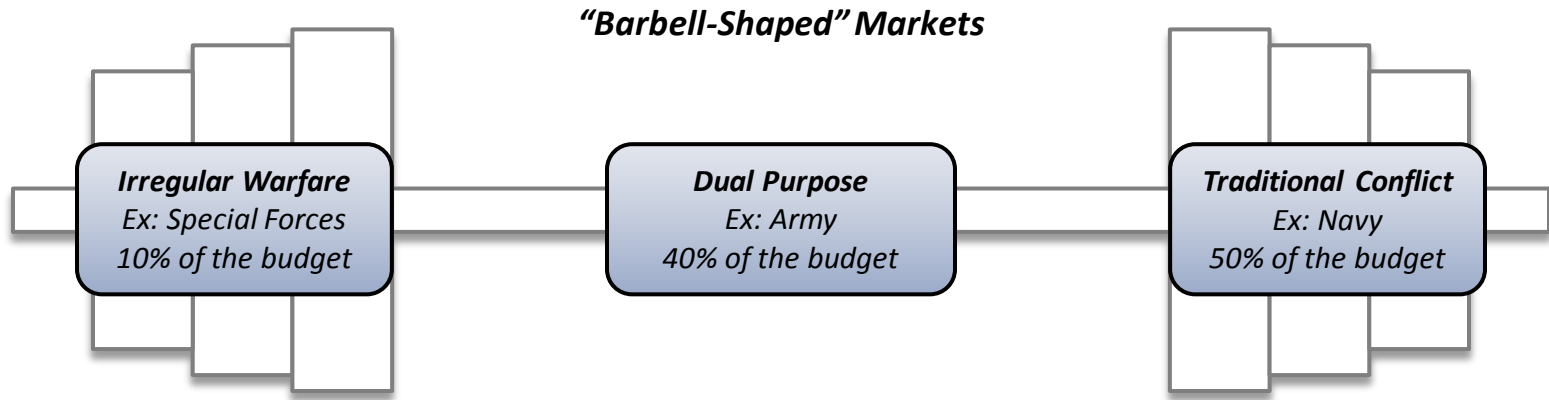
Planned Budget Authority in Constant \$B Including Supplementals and FY11 FYDP (does not forecast additional supplementals)



Source: US Department of Defense, RSAdvisors analysis

Where is the U.S. defense budget headed?

And with US DoD facing a wide spectrum of threats, from the fight of today to future, near-peer adversaries, how do you organize to address it?



The Long War

Slice #1 *Rapid acquisition, off-the-shelf/short development, quick response is key, COCOM centric*

Deterrence

Very long cycle, tech. development, platform-oriented but limited production, services centric

Reset/Retrofit

Slice #2 *Install “black boxes” in existing equipment to plug into network, maintenance, repair*

Transformation

Desire for large, horizontal integrating networks, leverage the IT revolution

Slice #3 **Operational and Policy Support Oriented Services**
Logistics, operations, and intelligence support

High-skilled Services
Technically skilled services

Is it one or two industrial bases? Can they be the same suppliers? How does DoD organize?

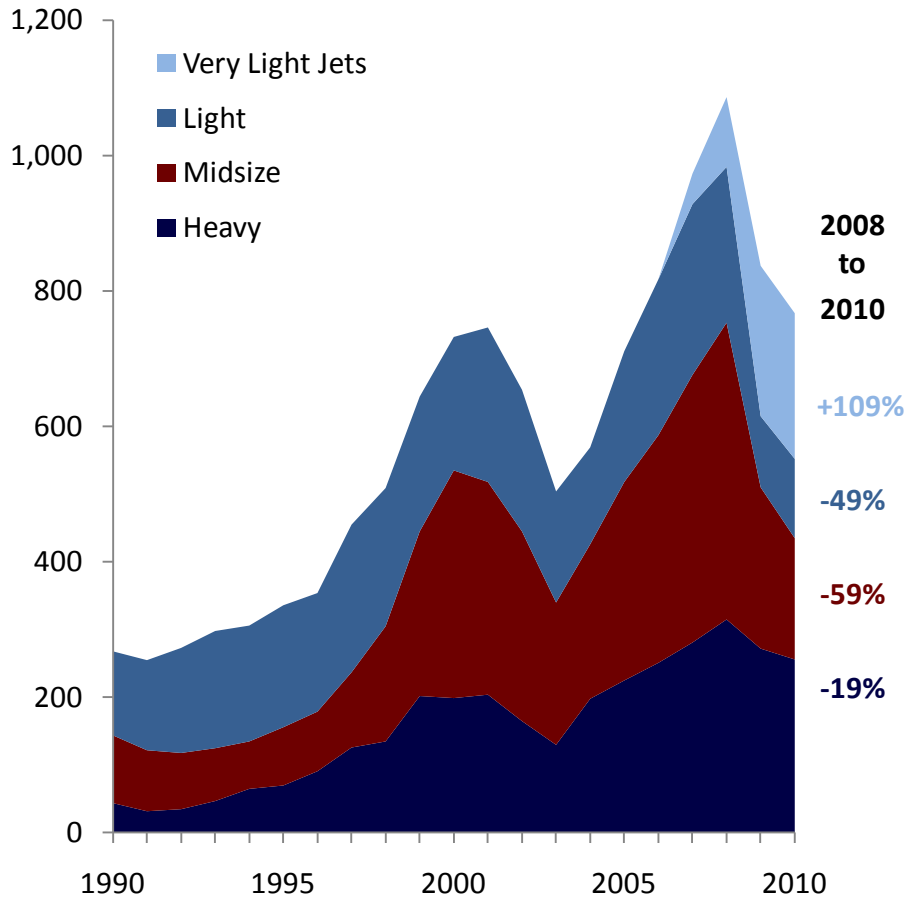
Source: US Department of Defense, RSAdvisors analysis

- **What kind of commercial recovery are we really in?**

Source: RSAdvisors analysis

Global Deliveries Per Year

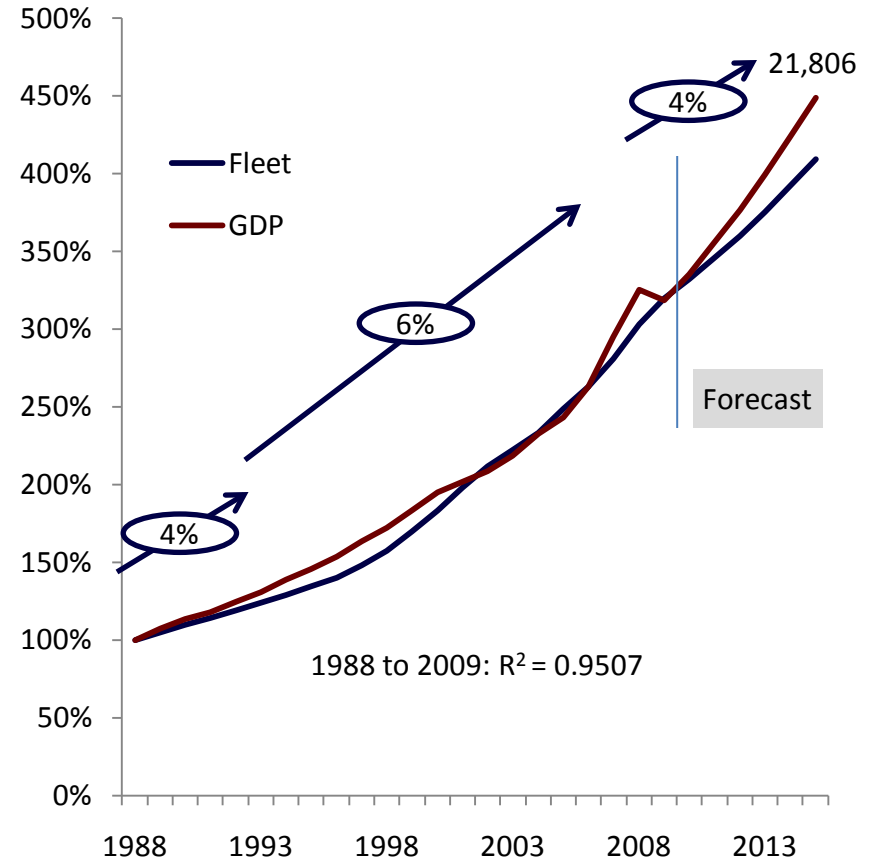
1990 - 2010



Global Fleet Compared to Global GDP

1988-2015

As of 3/1/10, the active fleet is now 17,239, up 203 from the end of 2009

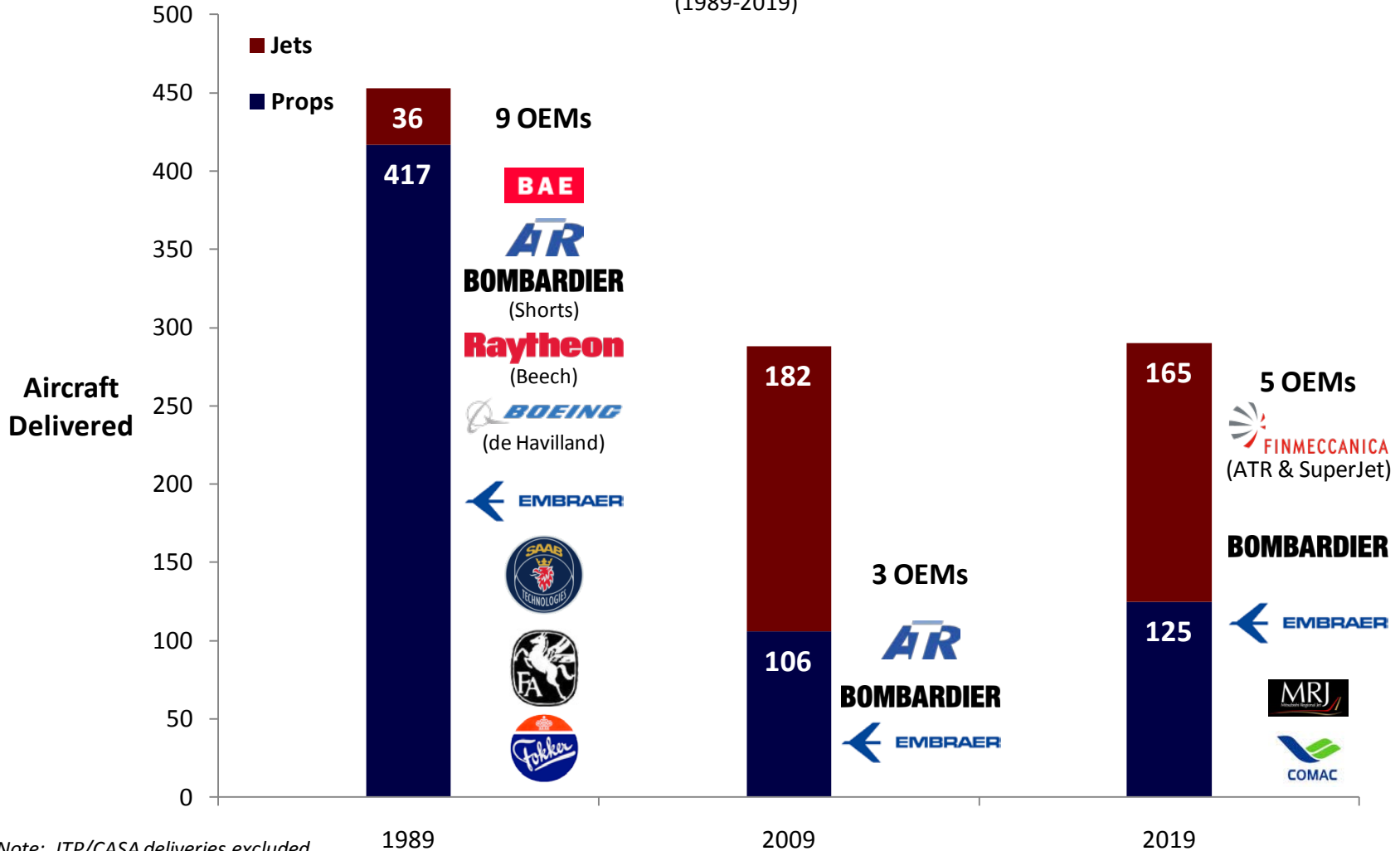


Note: Very light jets exclude the Eclipse 500

Source: GAMA, JETNET, Business and Commercial Aviation, RSAdvisors analysis

Regional Aviation Deliveries & Industrial Base Evolution

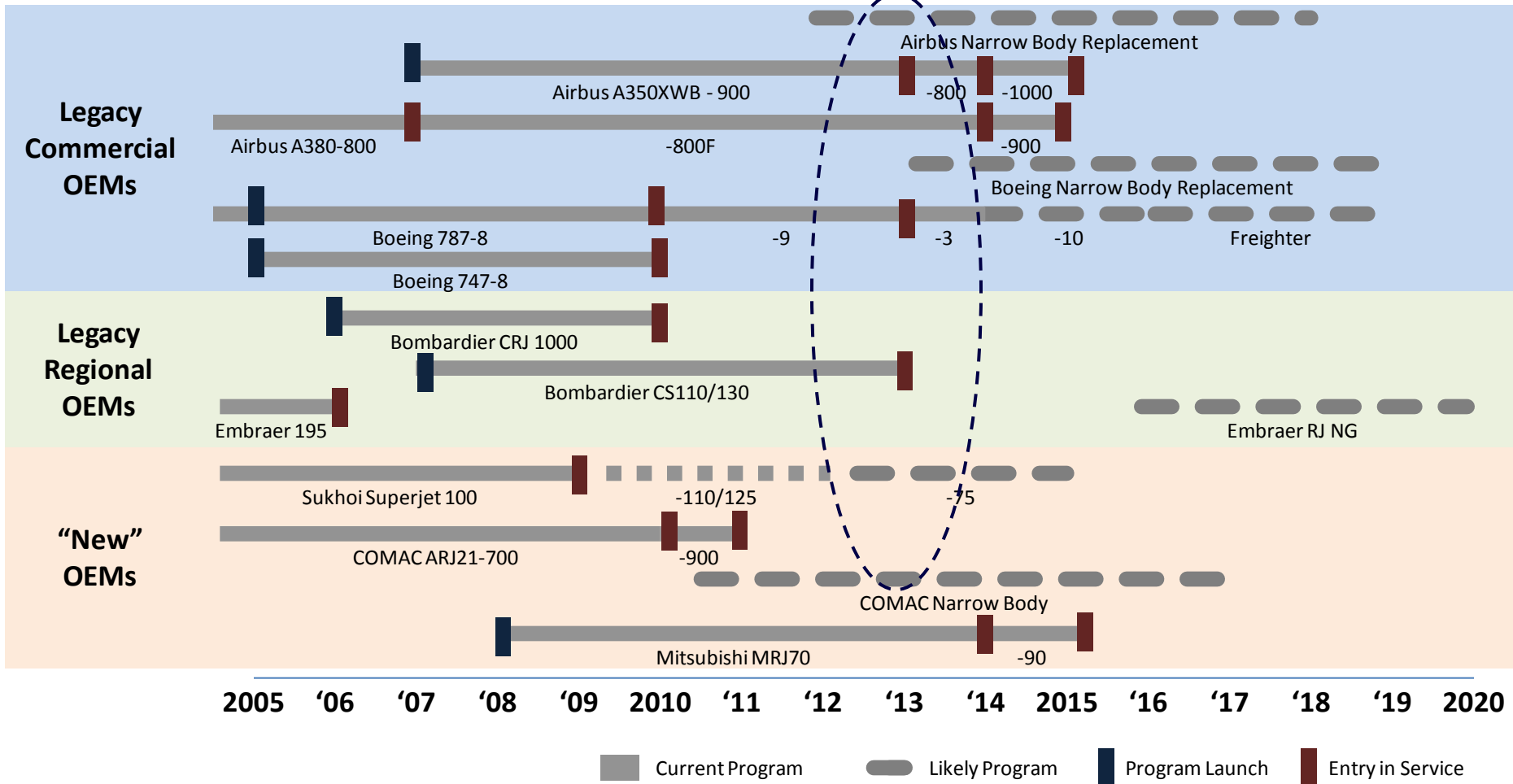
(1989-2019)



Note: ITP/CASA deliveries excluded

Source: Company released information, Teal, RSAdvisors analysis

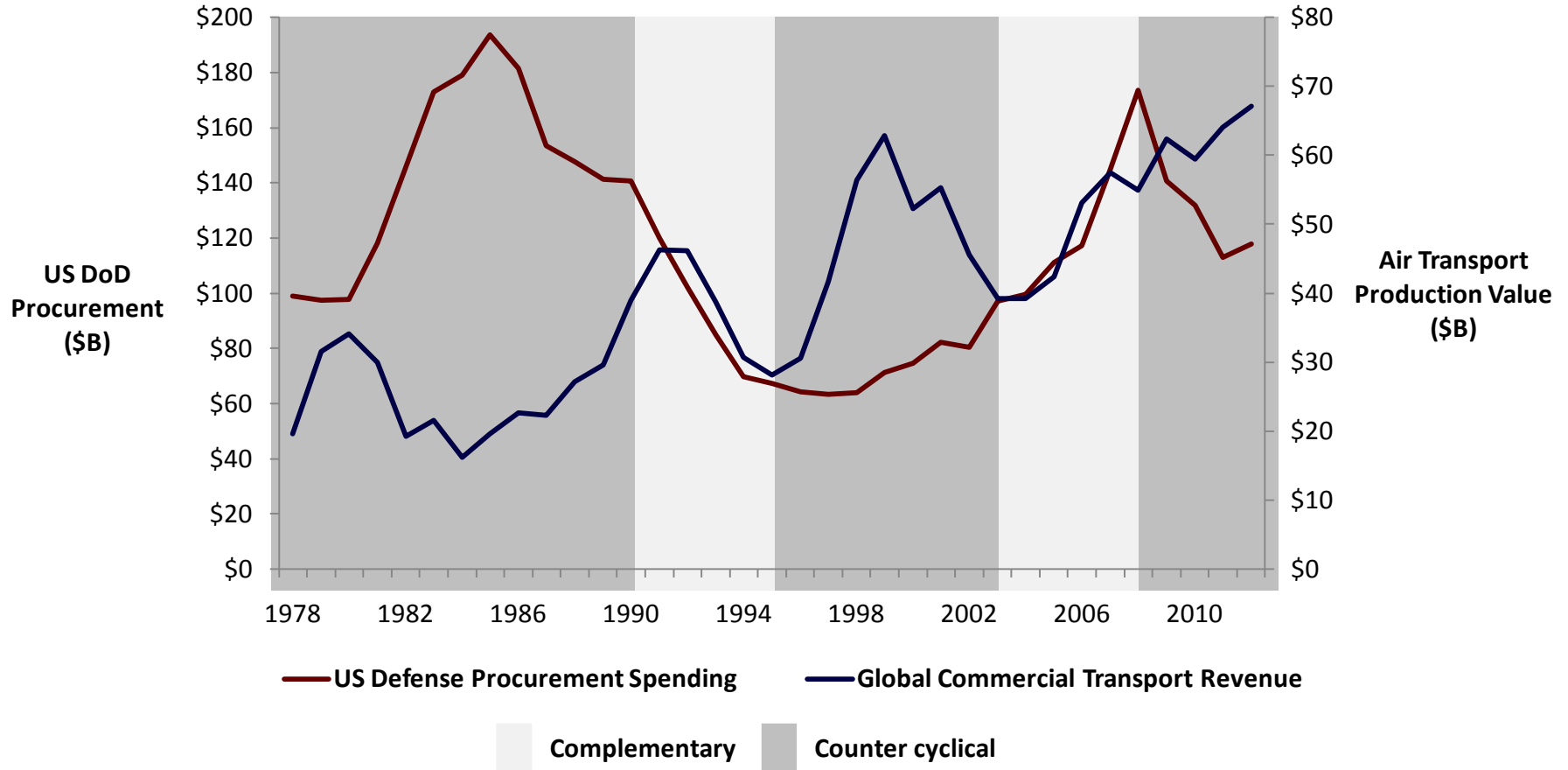
New Commercial Jet Programs (2005-2020)



Source: Company released data, RSAdvisors analysis

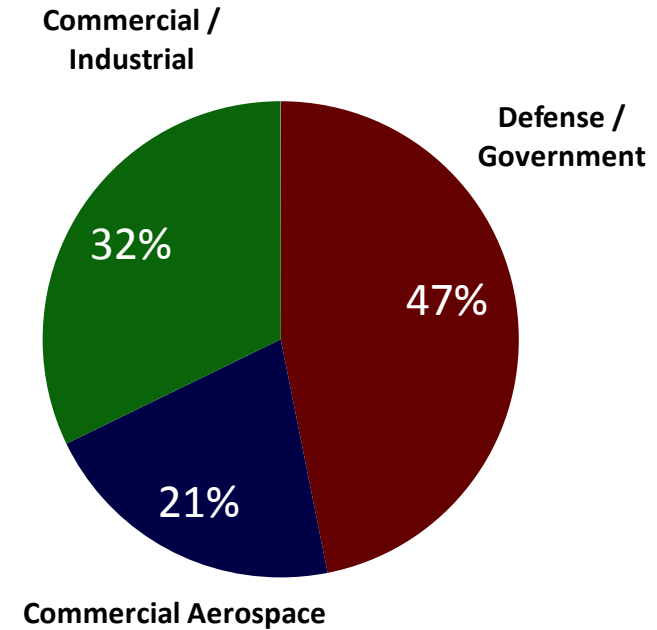
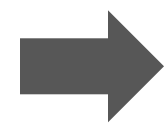
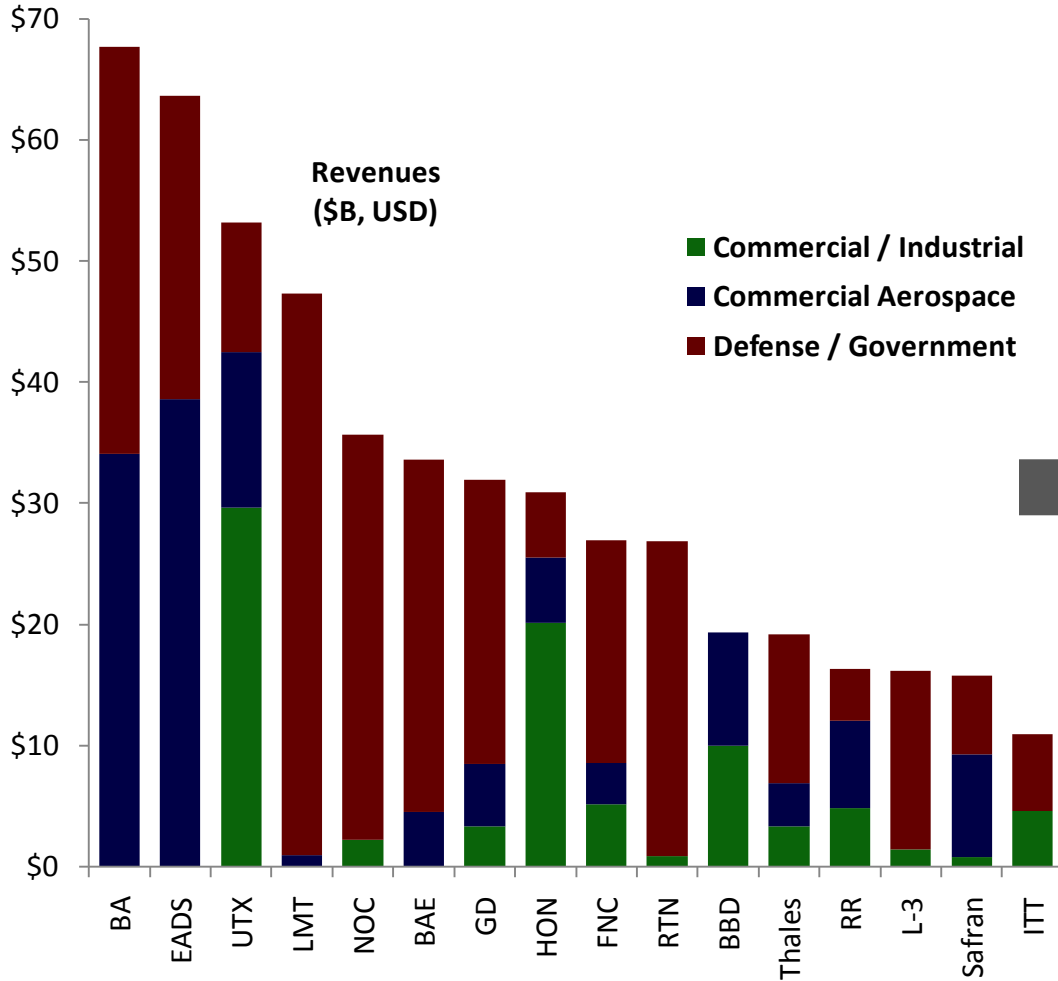
- **Are the defense and commercial markets counter cyclical or complementary?**

Air Transport Production Value vs. US Defense & Security Procurement, 1978-2015



Source: US Government, Teal, company released data, RSAdvisors analysis

Top A&D companies, by 2009 revenues¹, share of business by sector



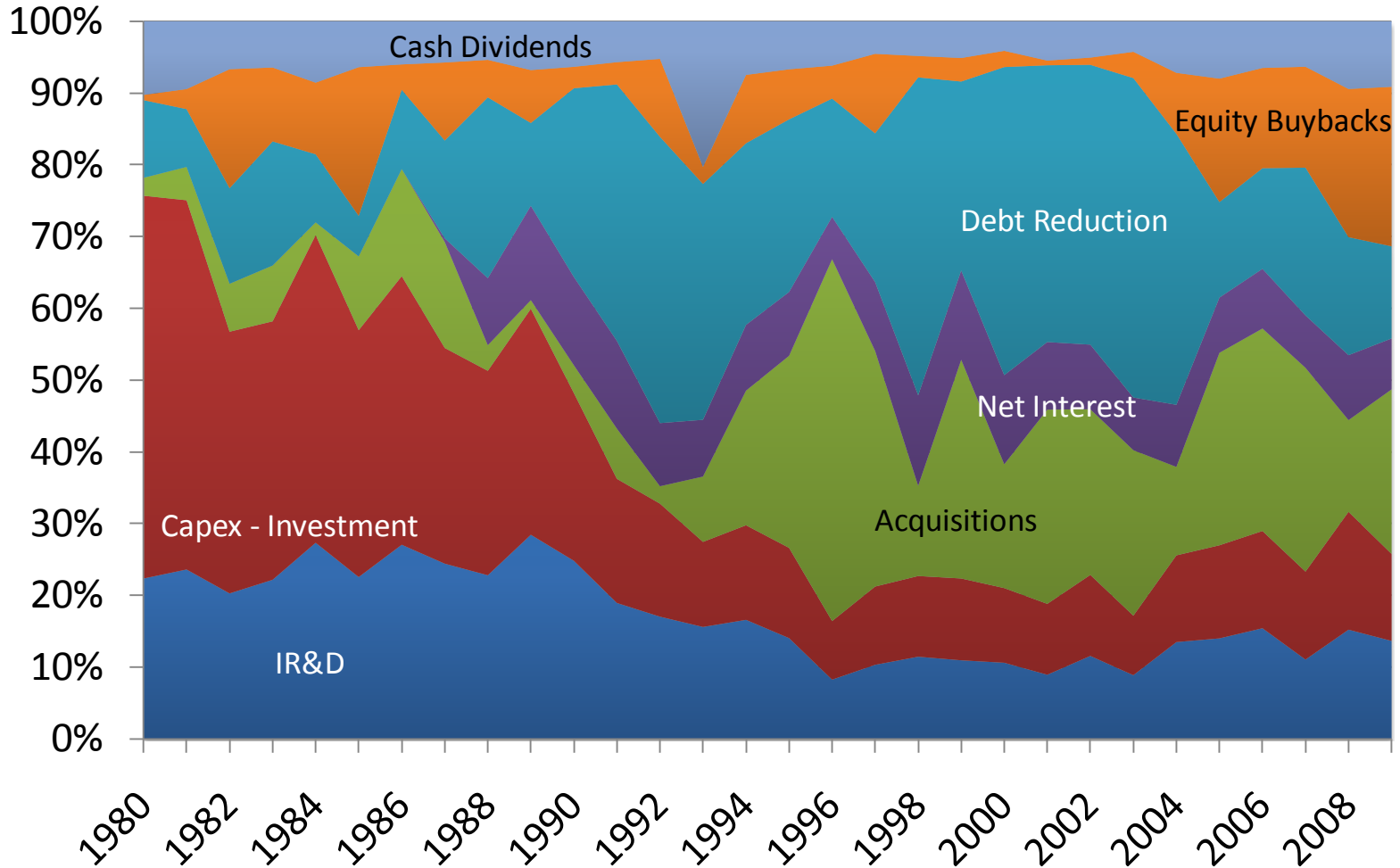
Note: 1) excludes corporate reporting units

Source: CapitalIQ, company filings, RSAdvisors analysis

- **How can industry respond?**

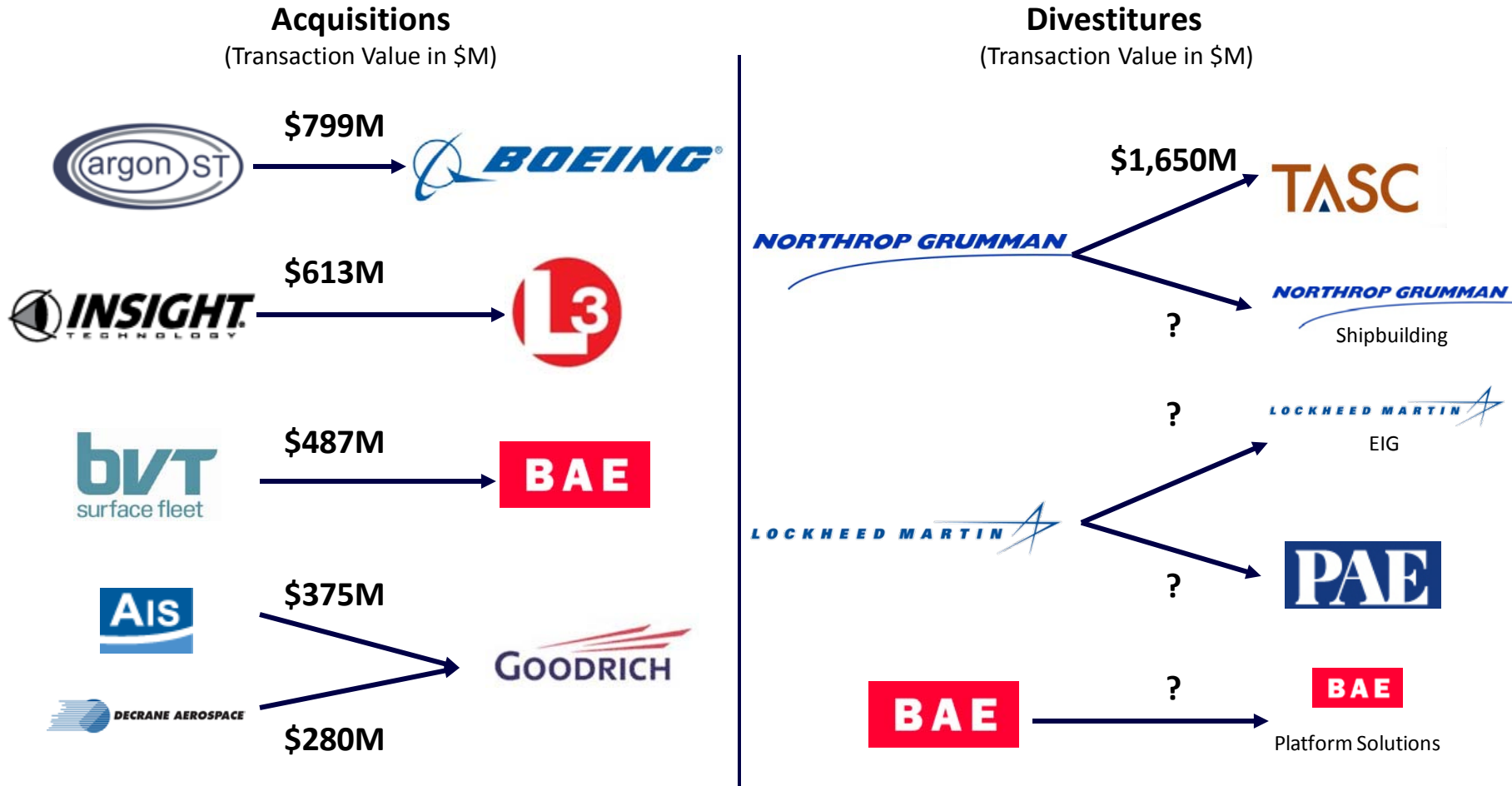
- **Reinvest through organic growth domestically – find the “white space”**
 - i.e. reshape strategy to meet new market threats
 - i.e. develop a new engine
- **Reinvest through organic growth internationally**
 - i.e. develop indigenous sales channels
 - i.e. build a local production line
- **Give the money back**
 - i.e. dividend cash back to shareholders and investors
- **Grow or diversify through strategic mergers and acquisitions**
 - i.e. AlliedSignal’s acquisition of Honeywell
 - i.e. Goodrich’s acquisition of Rohr, Coltec, Barnes, TRW Aeronautical, etc.
 - i.e. SAFRAN’s acquisition of L-1

Defense Industry Cash Outflows (Percent)
1980-2009



Sources: CapitalIQ, FactSet, company filings, RSAdvisors analysis

Recent Major Transactions



Note: Northrop Grumman has announced plans to separate the Shipbuilding division; Lockheed Martin has announced plans to divest EIG and PAE; BAE has announced plans to sell its engine controls, commercial avionics, and power and energy management business units

Source: CapitalIQ, company released data, RSAdvisors analysis

- **How has the global recession affected the aerospace and defense market?**
 - Answer: It reminded us we are in a cyclical industry
- **What's happening to the defense and security budget?**
 - Answer: It's under pressure, but still robust for the near term and the US will remain the largest market in the world over the long term
- **What kind of commercial recovery are we really in?**
 - Answer: One that is segmented with high growth (narrow bodies), no near term growth (regionals, large business jets), and continued uncertainty (commercial jumbos, small business jets)
- **Are the defense and commercial markets counter cyclical or complementary?**
 - Answer: Both
- **How can industry respond?**
 - Answer: By doing something, not standing still – historically companies that adopted a proactive strategy performed better in the recovery

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