



4th Annual Acquisition Research Symposium

"Desired Characteristics of the 21st Century Defense Industry"

**Monterey, CA
May 8, 2007**

Pierre A. Chao

Senior Fellow and Director Defense-Industrial Initiatives

202-775-3128 / pchao@csis.org

www.diig-csis.org



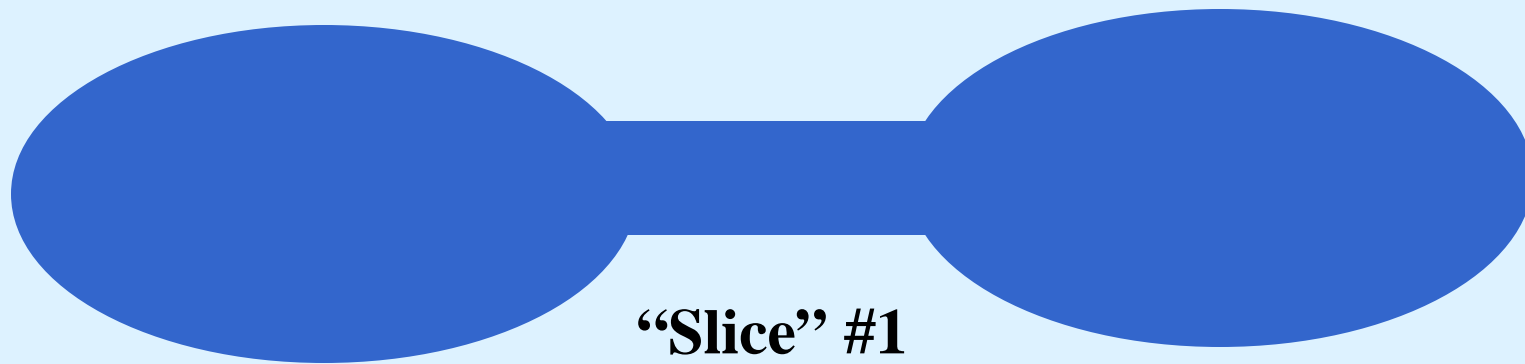
DoD Strategy Document Take Aways...

- **Two major thrusts**
 - The Long War against terrorist extremists
 - Dissuade near peer competitors – possess unquestioned military superiority so that armed conflict is unthinkable
- **Service moves**
 - Marines – lighter, fill in SOF roles
 - Army – more expeditionary, lighter, more trigger pullers
 - Navy – swap capital for labor, focus on the Pacific
 - Air Force – the near peer insurance policy
- **Will have to be accomplished in resource constrained environment**



Market Implications...

“Bar-bell” Shaped Markets



“Slice” #1

The Long War: rapid acquisition,
Off the shelf/short development,
quick response is key, COCOM centric

Dissuade: very long cycle,
Technology development, platform
oriented but limited production, service
centric

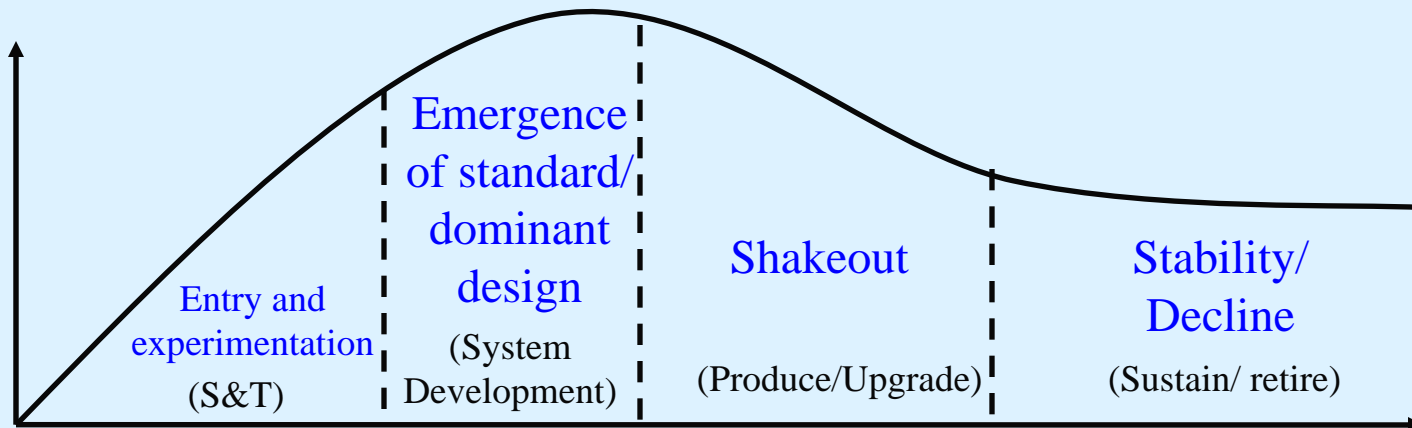
“Slice” #2

Reset/Retrofit: Install “black boxes”
in existing equipment to improve and
“plug into network”

Transformation: Desire for large,
horizontally integrating networks,
leverage the IT revolution



The Lifecycle of the Technology/Industry Sector...



Restart the cycle

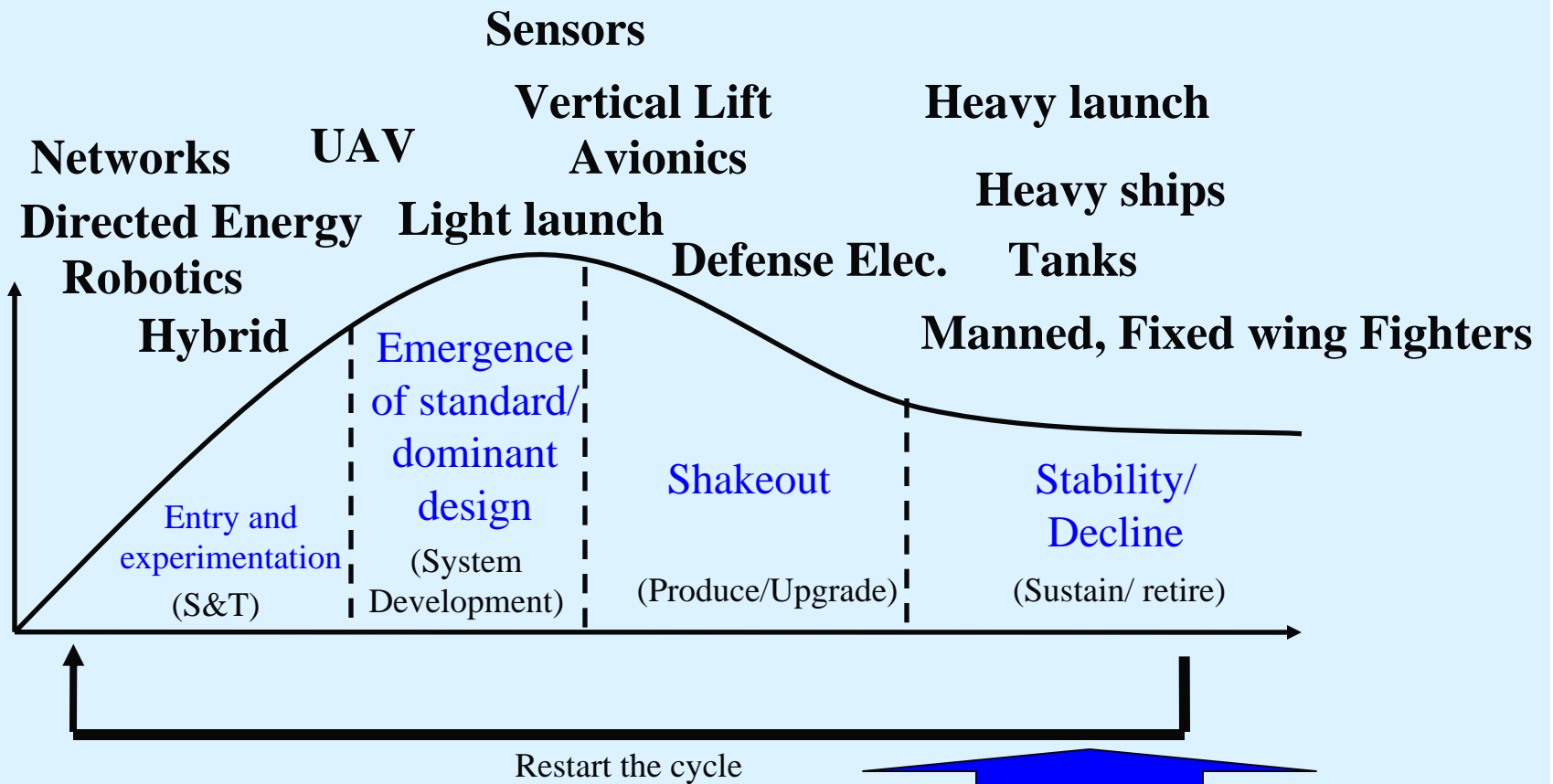
Product Innovation

Process Innovation

Fewer Competitors



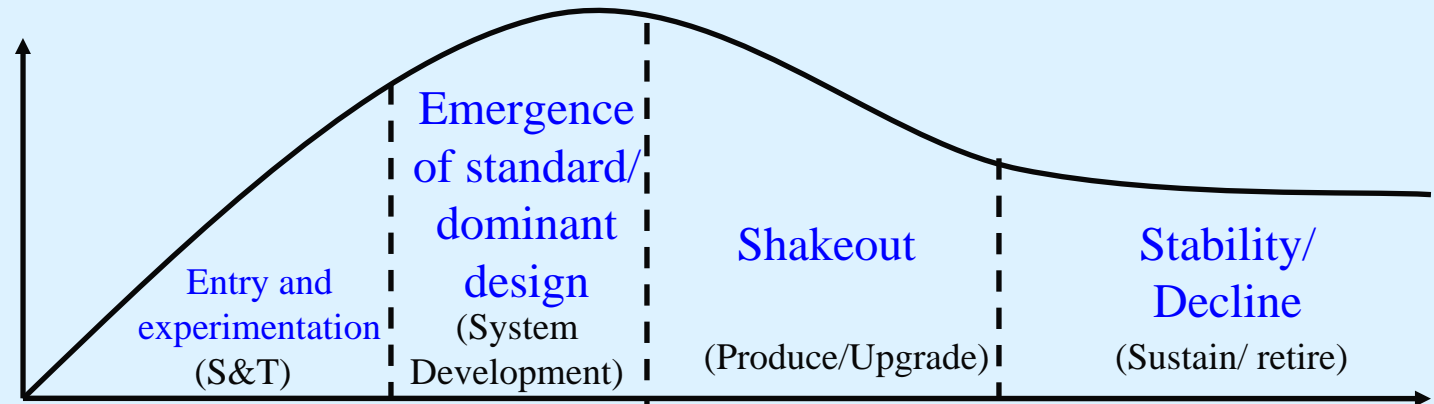
Where You Are in the Lifecycle...



**Caveat – fight wars with the military
you have**

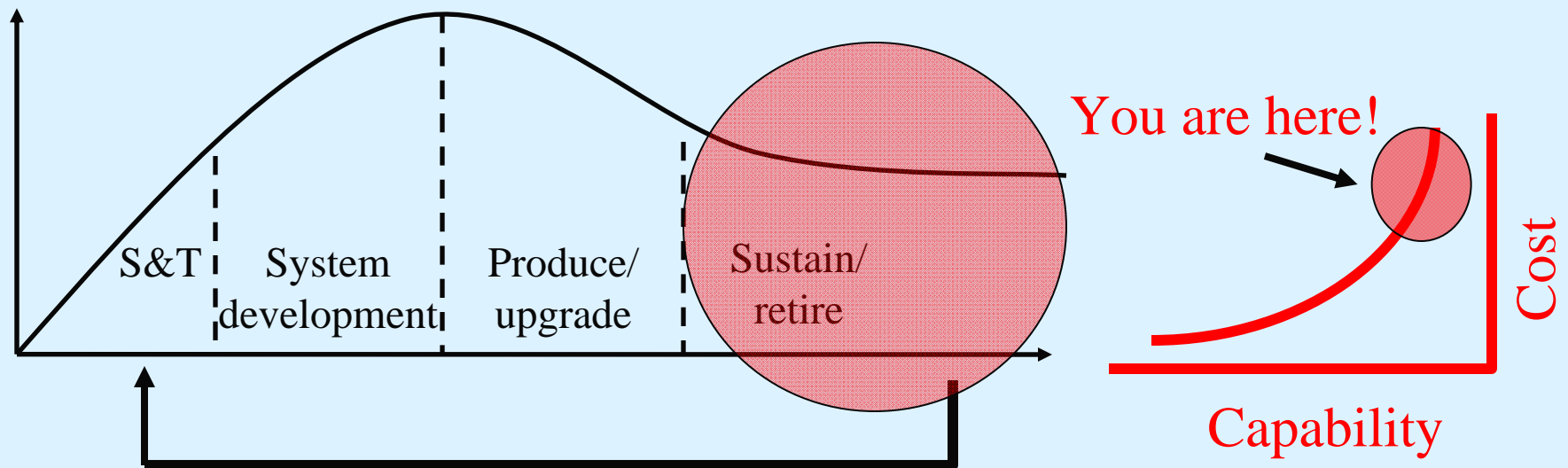


And Solutions/Incentive Structures...



Key Actors	Gov't, Academia FFRDC, industry (Skunk Works, UAV)	Industry (in production)	Industry, depot yard, arsenal
H.C.	Scientists	engineers	manufacturing support/logistics
Market Dynamic	← Competition →	← Negotiation/partnership →	
Financial	← Growth →	← Margins →	← ROIC →
Investors	← Growth →	← GARP →	← Value →

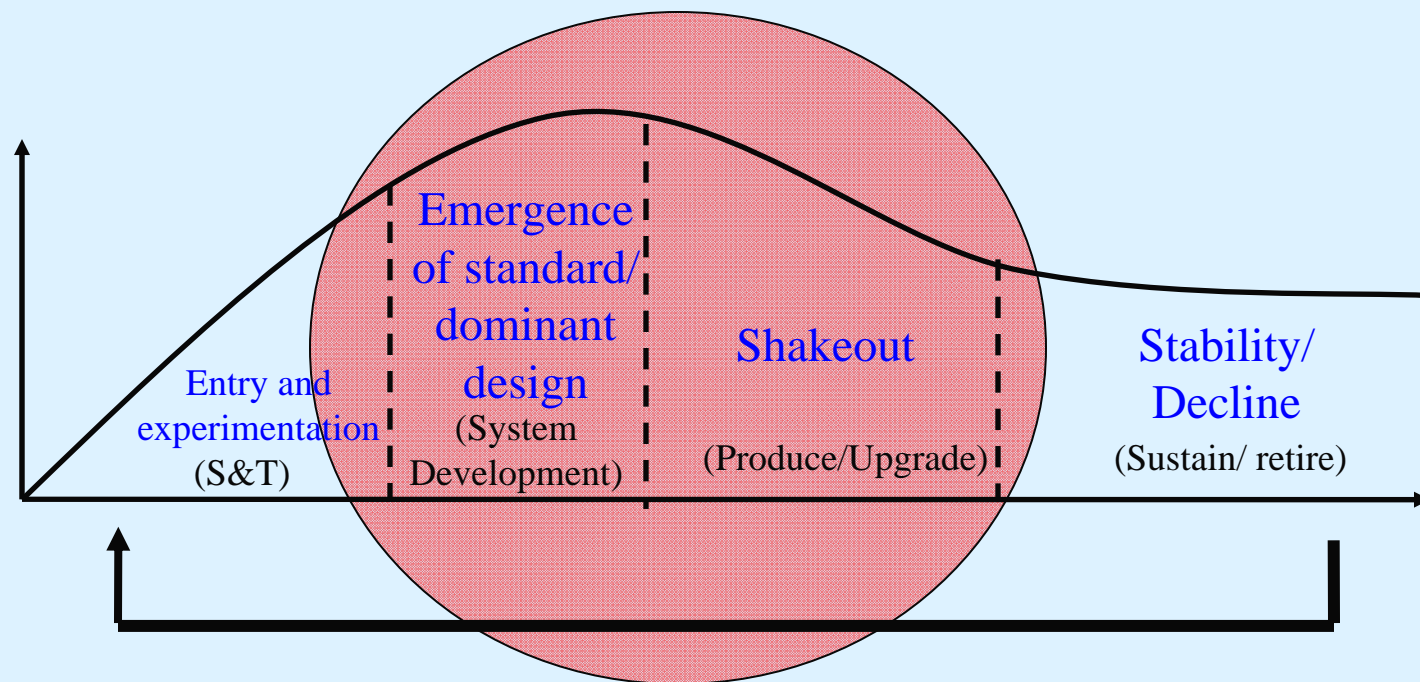
The Cost-To-Capability Curve “Going Asymptotic”...



- Two choices
 - Brutal focus on efficiency/process innovation
 - Restart the cycle/move to a new curve/product innovation



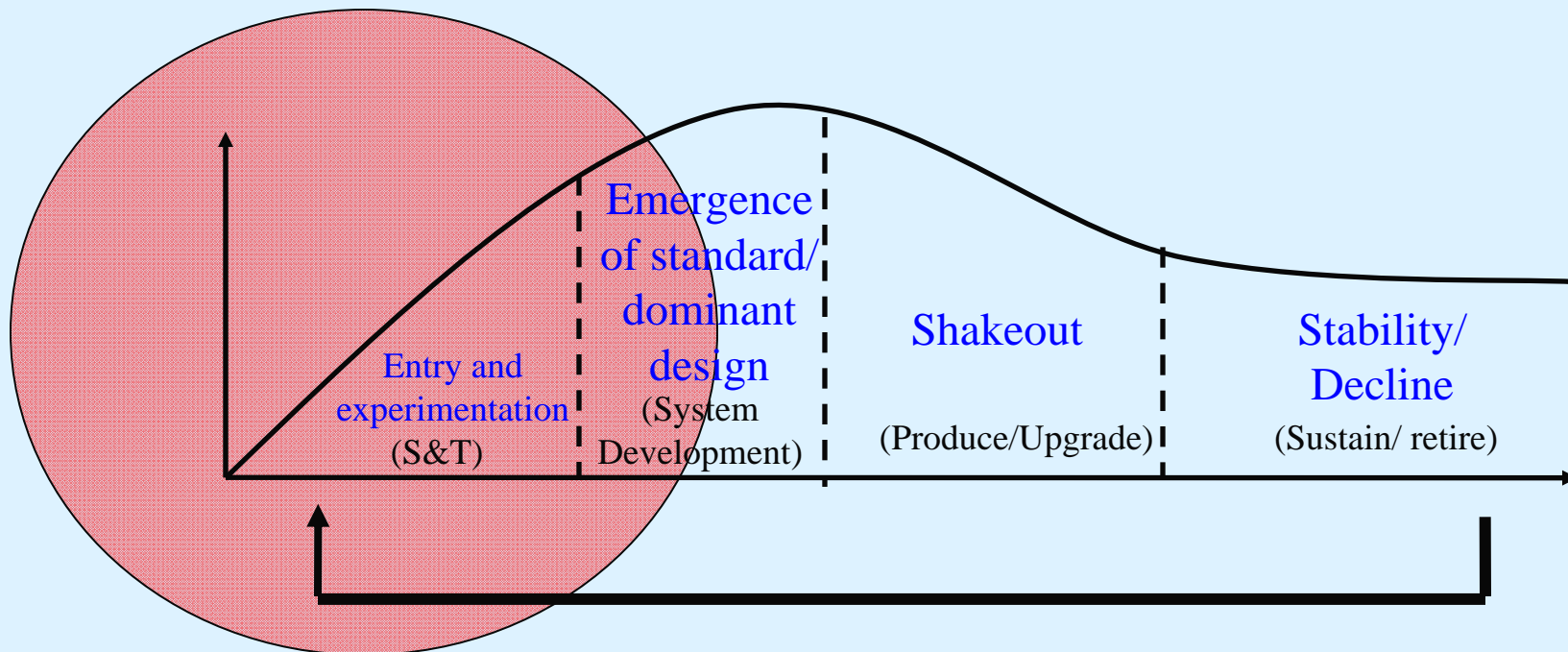
Heart of the Industry...



Key issue – relationship between government and industry (LSI's, etc.)



Dynamic, innovative, active...





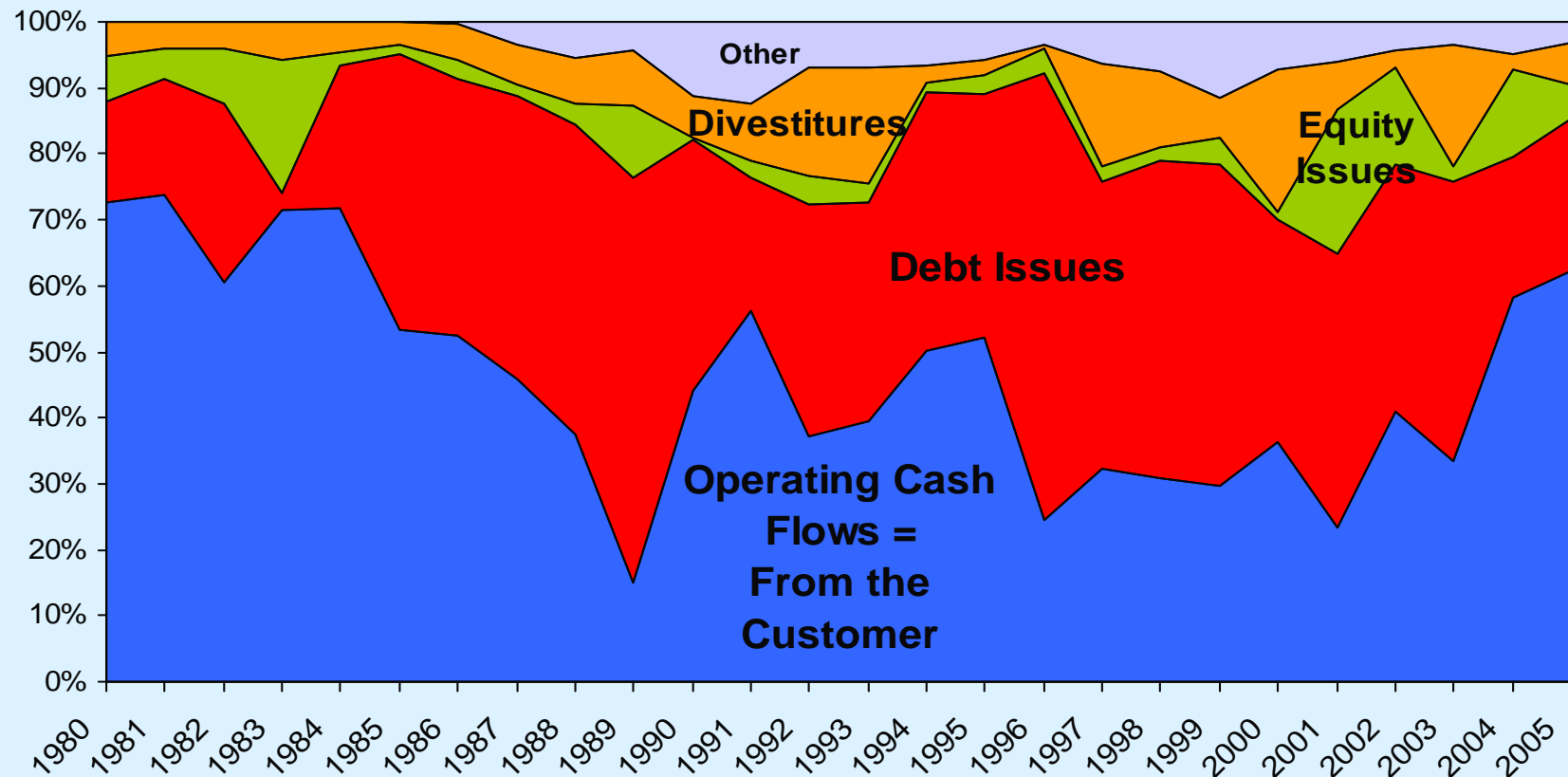
Industry Financial Performance and Strategies



Why Care About Wall Street?

In the last 20 years, financial markets have provided 40-80% of the capital needed to operate...

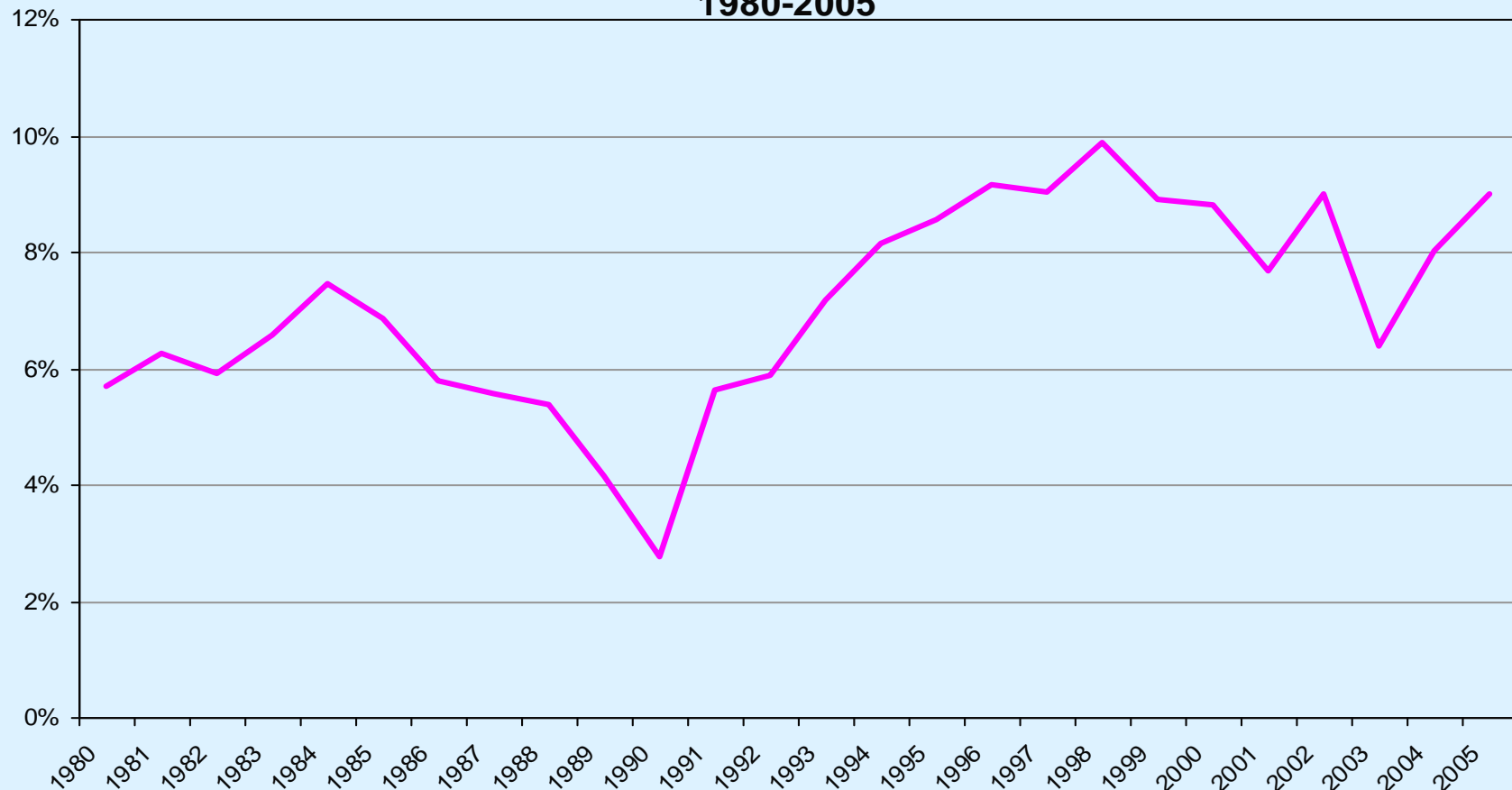
Defense Industry Cash Inflows (Percent), 1980-2005





Overall Defense Industry Margins Near Highs. . .

**CSIS Defense Index Average Operating Margin (weighted by revenue),
1980-2005**

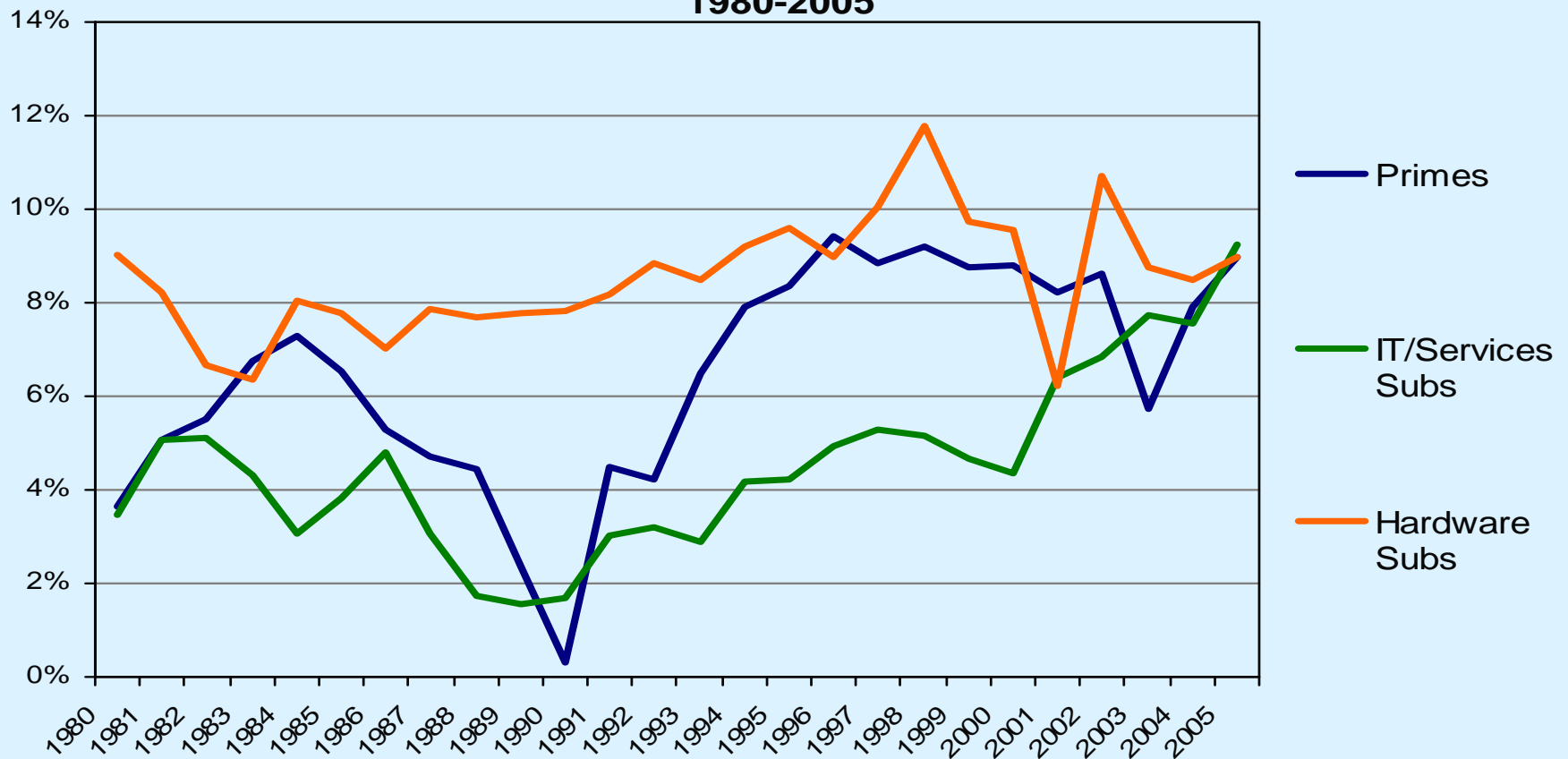


Sources: FactSet, Company Reports, CSIS Analysis.

Note: CSIS Defense Index comprises 36 publicly-traded companies with majority revenues derived from US defense business. Boeing Military results have also been included here.

From A Return Standpoint, Second Tier Does Better...

**Operating Margin by Company Type (weighted by revenue),
1980-2005**



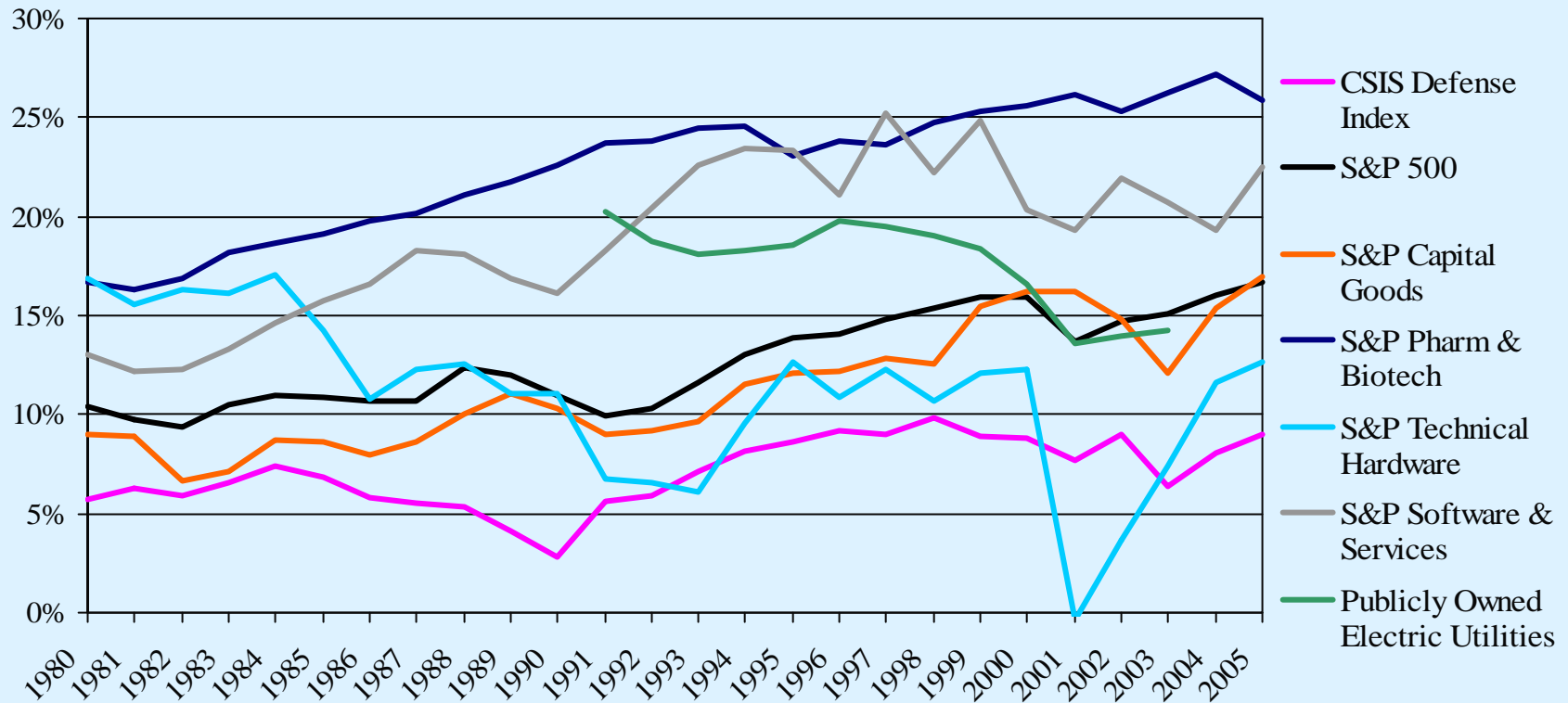
Sources: FactSet, S&P Compustat, Company Reports, CSIS Analysis.

Note: CSIS Defense Index comprises 36 publicly-traded companies with majority revenues derived from US defense business. Boeing Military results have also been included here.



However, Compared to Its Peers the Defense Industry Has the Lowest Returns...

Industry Average Operating Margin, 1980-2005 (weighted by revenue)

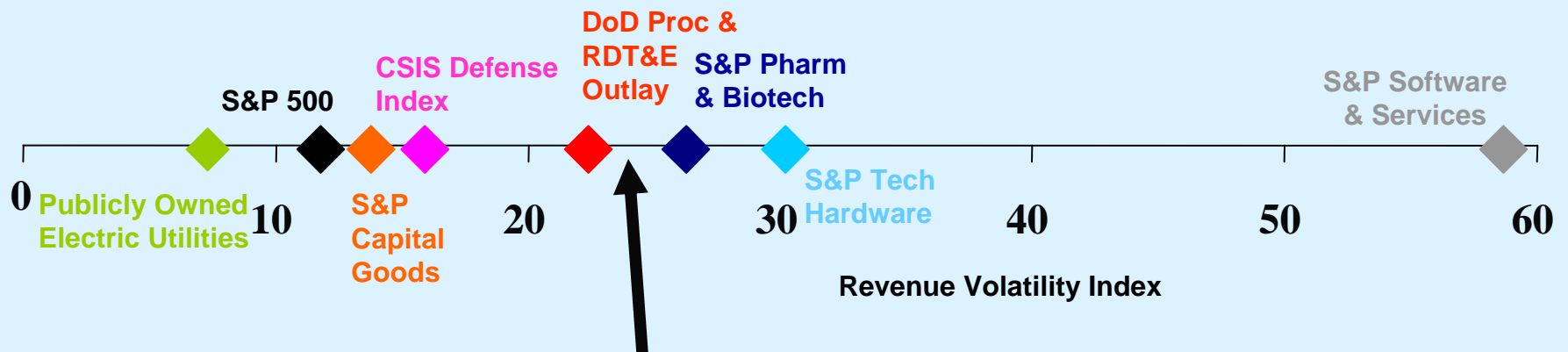


Sources: FactSet, S&P Compustat, Energy Information Administration, Company Reports, CSIS Analysis.

Notes: 1) CSIS Defense Index comprises 36 publicly-traded companies with majority revenues derived from US defense business. Boeing Military results have also been included here.
 (2) S&P Sub-sector constituents accurate back to 1994; composition held constant for years 1980 to 1993.

When Actually Measured, Volatility of the Defense Market is Higher Than Conventional Wisdom...

Industry Revenue Volatility, 1980-2005



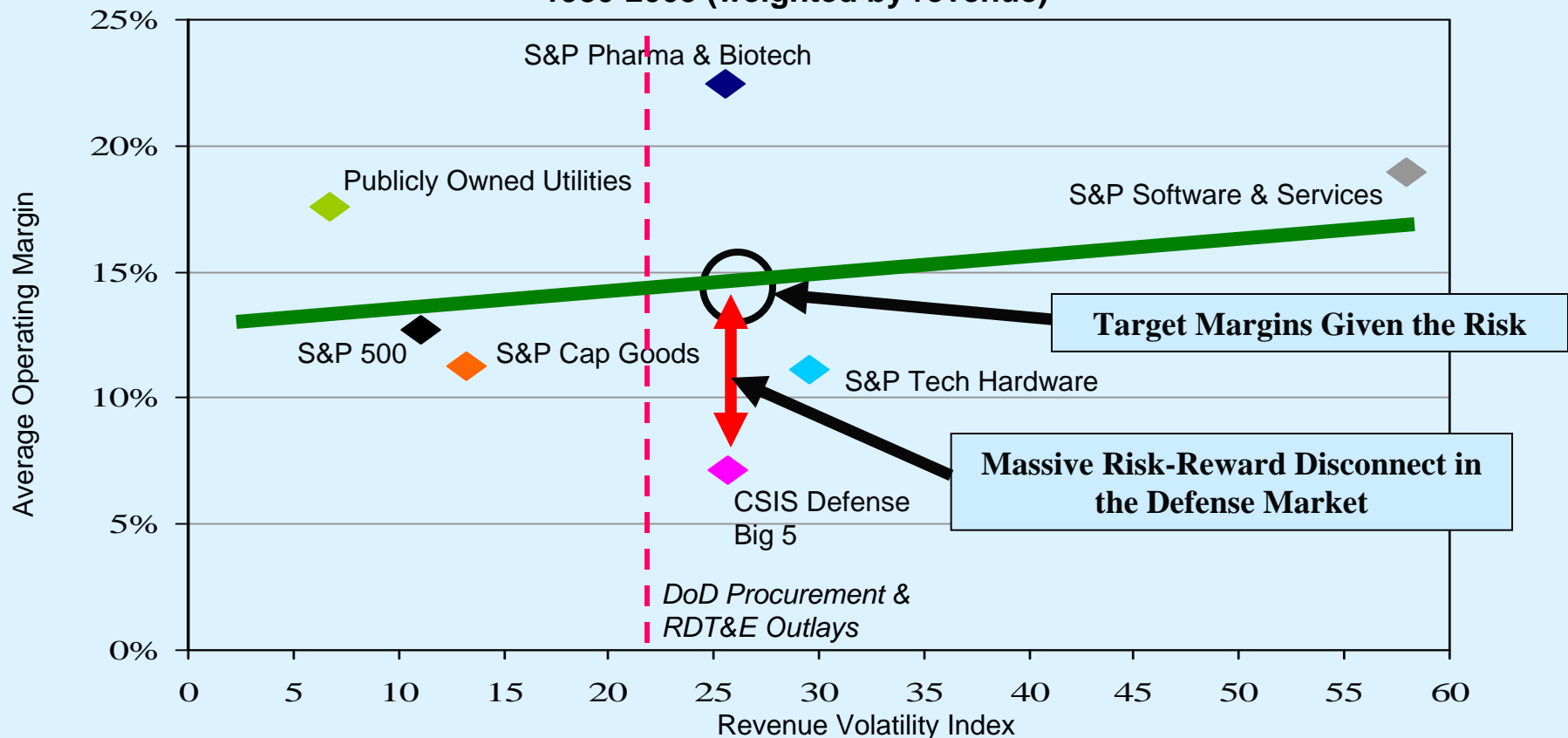
Defense “Market” Nearly as Volatile as Biotech/Pharma

Sources: FactSet, S&P Compustat, Energy Information Administration, National Defense Budget Estimates for FY2004, CSIS Analysis

Notes: 1) CSIS Defense Index comprises 36 publicly-traded companies with majority revenues derived from US defense business. Boeing Military revenues have also been included here.
 (2) S&P Sub-sector constituents accurate back to 1994; composition held constant for years 1980 to 1993.

***Policy Realities Leave Industry With Few Levers to Pull...
If margins cannot be increased, then lower volatility – multi-years, O&M, political***

**Industry Revenue Volatility versus Average Operating Margin,
1980-2005 (weighted by revenue)**

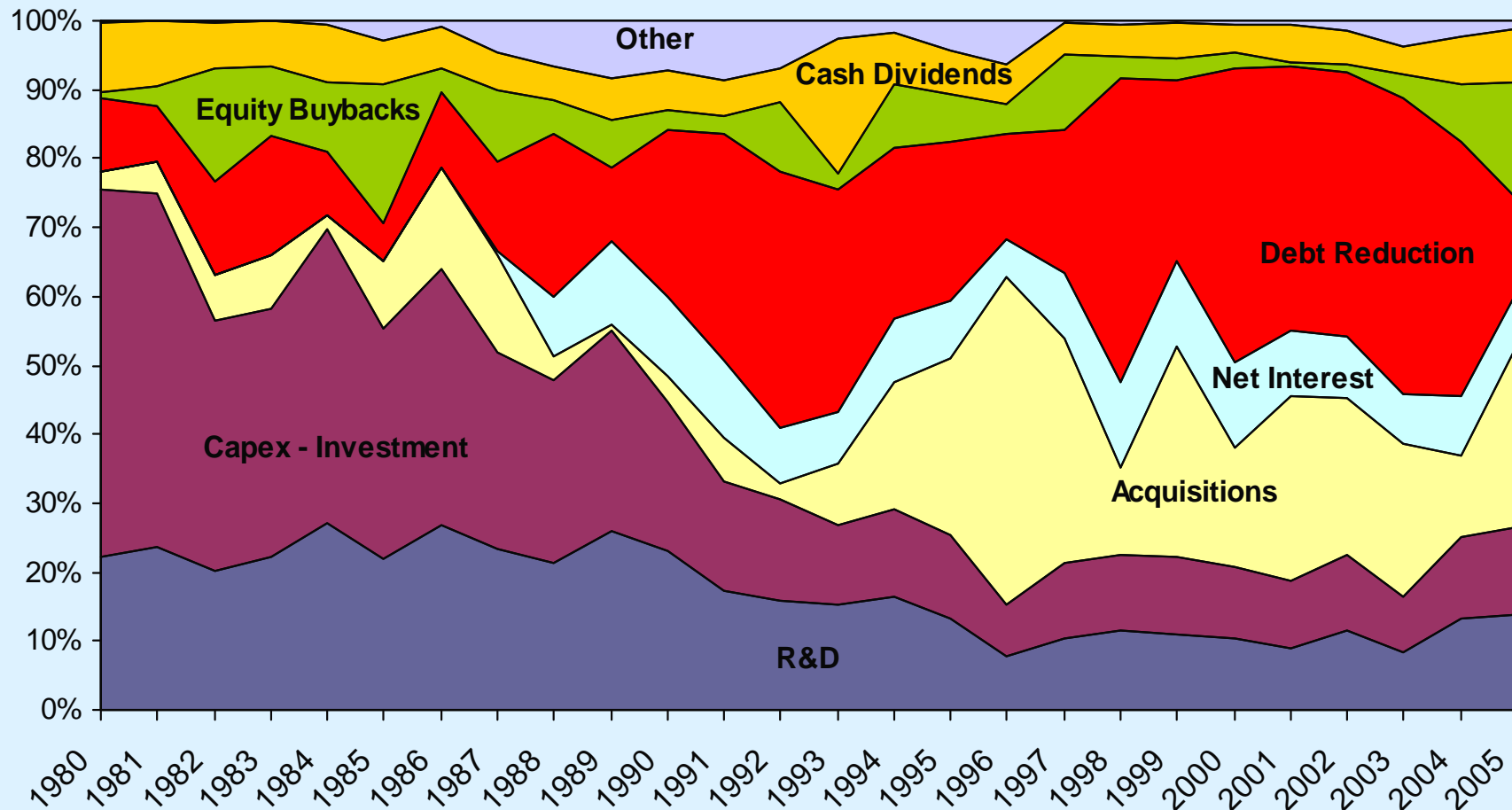


Sources: FactSet, S&P Compustat, Energy Information Administration, National Defense Budget Estimates for FY2004, Company Reports, CSIS Analysis.



Financial Response to the Policy and Market Realities...

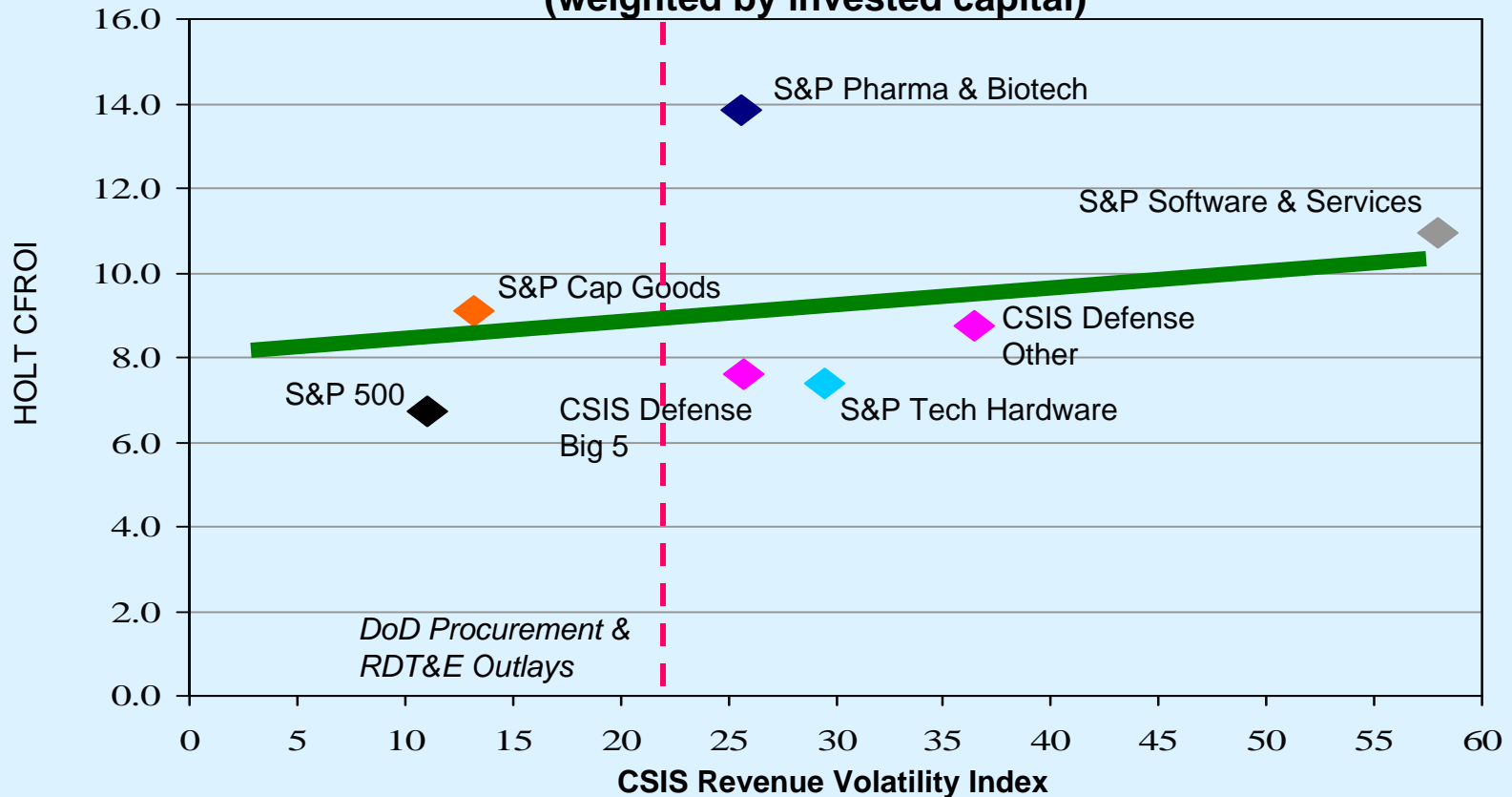
Defense Industry Cash Outflows (Percent)



Sources: FactSet, S&P Compustat, Energy Information Administration, Congressional Reports, CSIS Analysis

With This Strategy Industry “Returned To the Line” and Retained the Interest of Investors ...

Industry Revenue Volatility versus Cash Flow Return on Investment (HOLT CFROI) 1987-2005 (weighted by invested capital)



Sources: FactSet, S&P Compustat, Energy Information Administration, Congressional Reports, CSIS Analysis



Questions/Discussion



About CSIS

For four decades, the **Center for Strategic and International Studies (CSIS)** has been dedicated to providing world leaders with strategic insights on—and policy solutions to—current and emerging global issues.

CSIS is led by John J. Hamre, formerly deputy secretary of defense, who has been president and CEO since April 2000. It is guided by a board of trustees chaired by former senator Sam Nunn and consisting of prominent individuals from both the public and private sectors.

The CSIS staff of 190 researchers and support staff focus primarily on three subject areas. First, CSIS addresses the full spectrum of new challenges to national and international security. The **Defense Industrial Initiatives Group (DIIG)** is part of the CSIS International Security Program and focused on issues related to the global defense-industrial enterprise. Second, we maintain resident experts on all of the world's major geographical regions. Third, we are committed to helping to develop new methods of governance for the global age; to this end, CSIS has programs on technology and public policy, international trade and finance, and energy.

CSIS is private, nonpartisan, and tax-exempt. CSIS receives funding from public and private entities. CSIS does not take policy positions, the views in this presentation are those of the author.