

DAVID IGNATIUS

3/15/19

The Pentagon can't have everything

Sen. Mark R. Warner is all for defense modernization. But just don't touch those aircraft carriers, six of which are based in Norfolk.

The Virginia Democrat had said a year ago that rather than investing in 20th-century military technology, he wanted to discuss "a reallocation of some of those resources" to deal with the 21st-century challenge of cyberthreats. But when the Navy this week proposed to retire the carrier Harry S. Truman to save money for modernization, Warner urged it to "reassess this decision."

This battle between past and future is the hidden drama within the gargantuan \$750 billion fiscal 2020 defense budget proposal. Nearly everyone favors high-tech weapons to combat great-power adversaries in the new millennium, in principle. But meanwhile, the military-industrial-congressional complex, as John McCain termed it, keeps pumping vast sums to sustain legacy weapons systems.

The 2020 budget, shaped by acting defense secretary Patrick Shanahan, does propose some important changes. Spending for space programs would increase about 15 percent, and funding for cyberprograms would rise 10 percent. Yes, the Navy wants to add two new carriers while dropping the Truman, but it also proposes to build two big drone warships and some unmanned subs. The Army plans to cut or reduce 93 outmoded programs for vehicles, weapons and helicopters to make room for modernization.

"Overall, I think it's moving in the right direction," said Christian Brose, former staff director of the Senate Armed Services Committee. "The emphasis on modernization is clear and welcome."

But Brose offers some "caveats" about how the process will play out. The budget proposes \$104 billion for research, development, testing and evaluation, the biggest R&D request since the 1940s. But Brose says some of this will be "old wine in new bottles," such as spending for the wildly expensive F-35 fighter jet program, rather than disruptive new technology.

Some high-tech spending involves classic Pentagon log-rolling among the military services. Take, for example,

will be streaking across pentagon skies. The 2020 budget proposes to increase spending on hypersonic weapons to \$2.6 billion from \$2.4 billion (good) but gives the Army, Navy and Air Force their own hypersonic systems (crazy). The argument is that the United States will want air, land and sea versions, but why?

When there's new technology around, every service wants a piece of the action. Pentagon old-timers recall the battle in the 1950s between Army and Air Force generals about whether missiles were munitions or air weapons.

A deeper worry is whether some of the modernization spending in the 2020 budget will be thrown overboard to preserve legacy systems when Congress starts cutting the \$750 billion Trump administration request, as Democrats will demand. The final figure will probably be many tens of billions less, and powerful members of Congress will fight to preserve the aircraft carrier and F-35 procurements that protect jobs in their states and districts.

"Often, it's the future that ends up without a chair when the music stops," said Brose. He now works for a start-up company called Anduril Industries that wants to be a disrupter. It has built a system that uses artificial intelligence to fuse sensors and drones to solve defense problems, such as perimeter security at military bases or along the border, more effectively and cheaply than conventional systems. The Pentagon seems interested, but Congress will have the final say.

Military leaders are working to adapt old platforms to meet new challenges, and that's both good and bad. Adm. John M. Richardson, the chief of naval operations and a consistent advocate of innovation, says the Navy has made aircraft carriers stealthier, using electronic warfare and other measures, and by the end of this year will start arming carriers with lasers that can shoot down attacking missiles and planes.

"The aircraft carrier is less vulnerable than it's been since World War II," Richardson told me in an interview last week. He argues that, in combating Chinese military power in Asia, "the aircraft carrier is the most sustainable airfield in the theater."

Certainly, the United States needs aircraft carriers. But does it need 10 of them, as the 2020 budget contemplates (or 11, if Congress preserves the Harry S. Truman, as seems likely)? We need F-35s, too, but is the massive buy in the 2020 budget needed?

The Pentagon can't have everything it wants, and the danger is that when it's time to start cutting, the military-industrial-congressional complex will jettison the new weapons we need to keep the old ones we don't.

Twitter: @IgnatiusPost

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Twitter: @IgnatiusPost

The new scientific superpower

The National Science Foundation and the National Science Board have just released their biennial "Science & Engineering Indicators," a voluminous document describing the state of American technology. There are facts and figures on research and development, innovation and engineers. But the report's main conclusion lies elsewhere: China has become — or is on the verge of becoming — a scientific and technical superpower.

We should have expected nothing less. After all, science and technology constitute the knowledge base for economically advanced societies and military powers, and China aspires to become the world leader in both. Still, the actual numbers are breathtaking for the speed with which they've been realized.

Remember that a quarter-century ago, China's economy was tiny and its high-tech sector barely existed. Since then, here's what's happened, according to the "Indicators" report:

- China has become the second-largest R&D spender, accounting for 21 percent of the world total of nearly \$2 trillion in 2015. Only the United States, at 26 percent, ranks higher, but if present growth rates continue, China will soon become the biggest spender. From 2000 to 2015, Chinese R&D outlays grew an average of 18 percent annually, more than four times faster than the U.S. rate of 4 percent.

- There has been an explosion of technical papers by Chinese teams. Although the United States and the European Union each produce more studies on biomedical subjects, China leads in engineering studies. American papers tend to be cited more often than the Chinese papers, suggesting that they

involve more fundamental research questions, but China is catching up.

- China has dramatically expanded its technical workforce. From 2000 to 2014, the annual number of science and engineering bachelor's degree graduates went from about 359,000 to 1.65 million. Over the same period, the comparable number of U.S. graduates went from about 483,000 to 742,000.

Not only has Chinese technology expanded. It has also gotten more ambitious. Much of China's high-tech production once consisted of assembling sophisticated components made elsewhere. Now, says the report, it's venturing into demanding areas "such as supercomputers and smaller jetliners."

Of course, there are qualifications. China still lags in patents received. Over the past decade, American firms and inventors account for about half the U.S. patents annually, and most of the rest go to Europeans and Japanese. Recall also that China's population of 1.4 billion is more than four times ours; not surprisingly, it needs more scientists, engineers and technicians.

In a sane world — shorn of nationalistic, economic, racial and ethnic conflicts — none of this would be particularly alarming. Technology is mobile, and gains made in China could be enjoyed elsewhere, and vice versa. But in our contentious world, China's technological prowess is potentially threatening, as the U.S.-China Economic and Security Review Commission, a congressional watchdog group, has often pointed out.

One danger is military. If China makes a breakthrough in a crucial technology — satellites, missiles, cyberwarfare, artificial intelligence, electromagnetic weapons — the result could be a major shift in

the strategic balance and, possibly, war.

Even if this doesn't happen, warns the commission, China's determination to dominate new industries such as artificial intelligence, telecommunications and computers could lead to economic warfare if China maintains subsidies and discriminatory policies to sustain its firms' competitive advantage.

"Industries like computing, robotics, and biotechnology are pillars of U.S. economic competitiveness, sustaining and creating millions of high-paying jobs and high-value-added exports," the commission said in its latest annual report. "The loss of global leadership in these future drivers of global growth" would weaken the American economy. Chinese theft of U.S. industrial trade secrets compounds the danger.

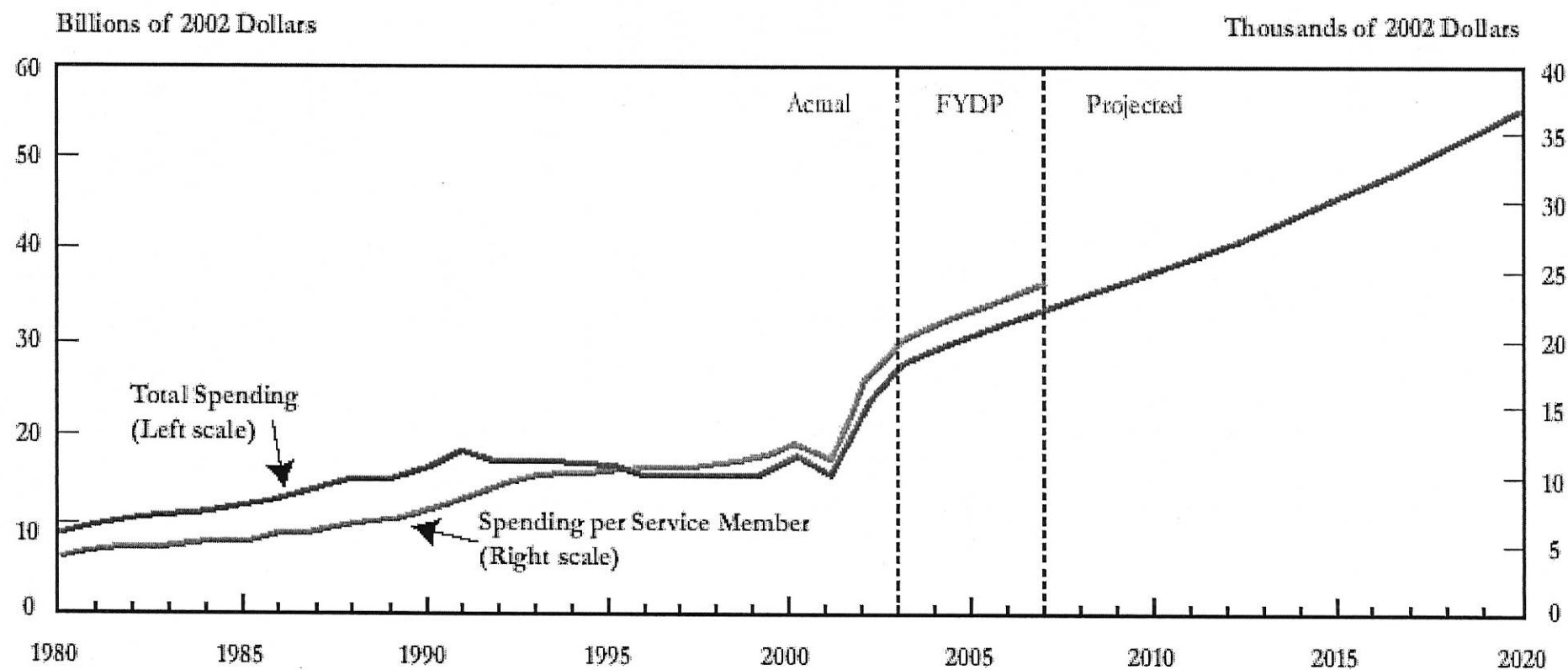
The best response to this technological competition is to reinvigorate America's own technological base. For example: Overhaul immigration to favor high-skilled newcomers, not relatives of previous immigrants; raise defense spending on new technologies to counter China; increase other federal spending on "basic research." (Government provides most of the money for this research, which is the quest for knowledge for its own sake, and amazingly has cut spending in recent years).

"We are involved in a global race for knowledge," said France Córdova, head of the NSF. "We may be the innovation leader today, but other countries are rapidly gaining ground."

It is hardly surprising that China has hitched its economic wagon to advanced technologies. What is less clear and more momentous is our willingness and ability to recognize this and do something about it.

1/22/18

Medical Spending



THE COST OF WAR

At \$439 billion and counting, the global war on terror is now the United States' fifth-most expensive war, according to calculations by the Congressional Research Service, Congress' research arm.

2006

War	Actual dollars	Constant 2007 dollars
Figures in billions		
American Revolution	\$0.1	\$3.6
War of 1812	0.9	1.1
Mexican War	0.8	2.0
Civil War	3.3	80.8
Spanish-American War	0.3	7.3
World War I	33.0	642.0
World War II	296.0	3,211.0
Korea	67.0	691.0
Vietnam	111.0	650.0
Desert Storm	61.0	92.0
Global war on terror	(n/a)	439.0 so far

SOURCE: Congressional Research Service

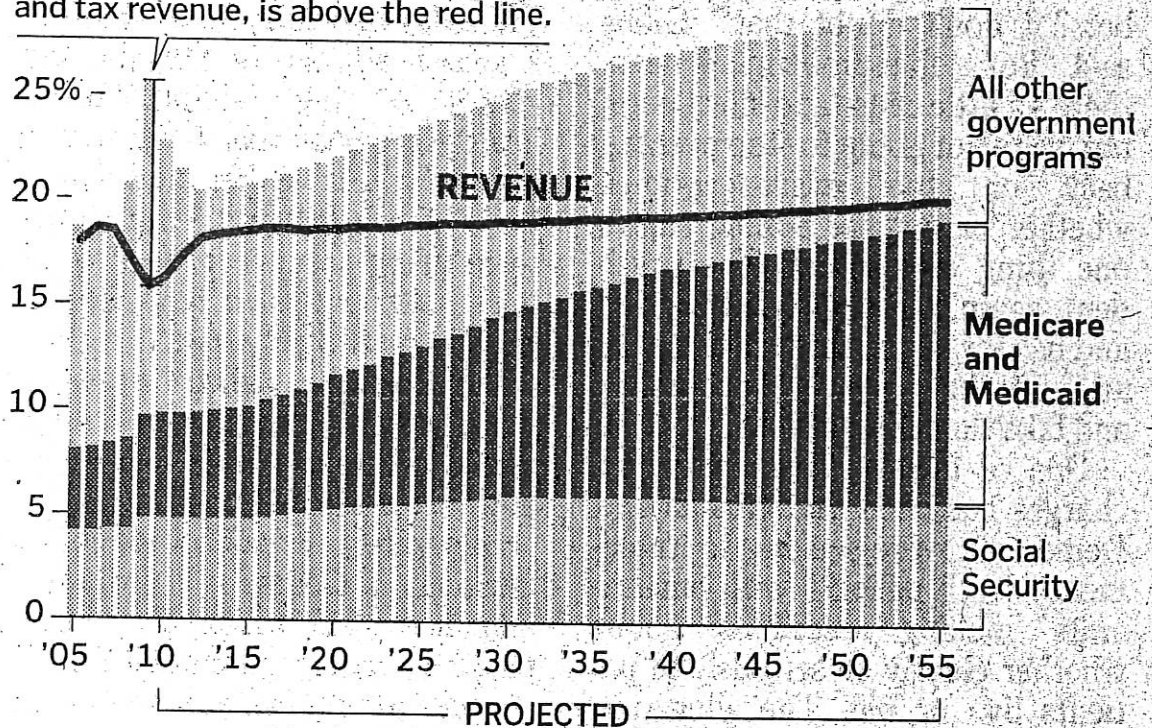
DEFENSE NEWS GRAPHIC BY J. BRETSCHNEIDER

Federal Overspending

Exploding health-care costs are forecast to send annual budget deficits soaring, forcing the government to borrow heavily. For a health-reform bill to win broad support on Capitol Hill, key lawmakers say it must restrain federal health spending and begin to improve the grim budget outlook.

Federal spending as a percentage of GDP

The annual budget deficit, or the gap between spending and tax revenue, is above the red line.

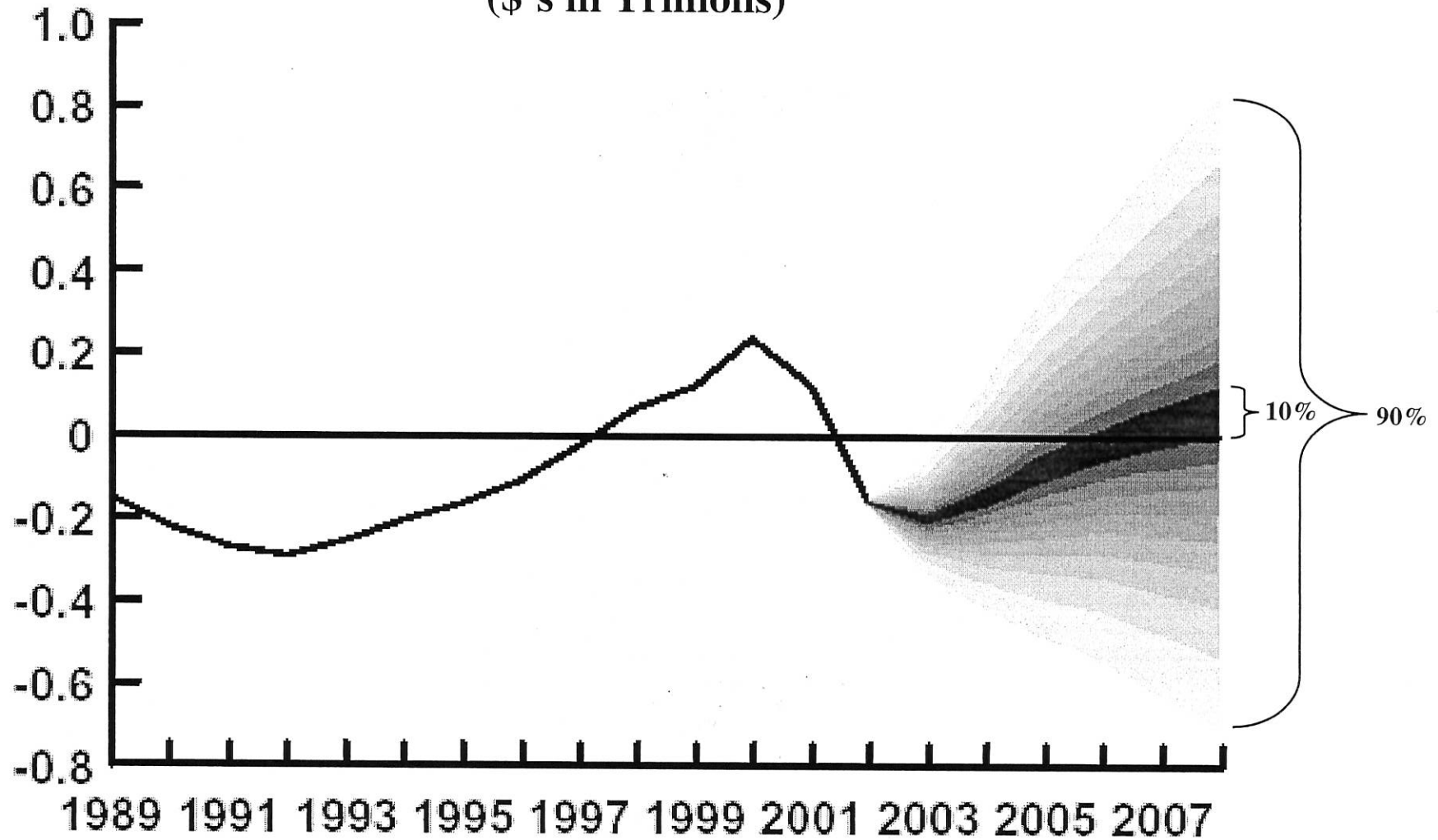


SOURCE: Congressional Budget Office

THE WASHINGTON POST

Uncertainty of CBO's Projections of the Total Budget Surplus

(\$'s in Trillions)



"Without clear definitions or reporting standards for counterterrorism spending, key agencies such as Homeland Security and the State and Defense Departments are not on the same page when accounting for their counterterrorism programs," says study group member and former Under Secretary of Defense (Comptroller) Mike McCord. "This can't help in coordinating our programs across agencies. Neither our leaders nor our citizens can properly assess the cost of our counterterrorism efforts if we don't measure and present those costs clearly. Doing so is a necessary first step toward judging the efficiency or effectiveness of these efforts."

The report identifies five ways that the Office of Management and Budget (OMB) and Congress can work to make counterterrorism spending more transparent:

- Create a clear and transparent counterterrorism funding report;
- Adopt a detailed agency-wide definition for counterterrorism spending;
- Build on current accounting structures to anticipate future budget pressures;
- Tie the definition of war spending to specific activities;
- Require Congress to separately approve emergency or wartime spending.

"Accountability and transparency are critical elements of our democracy. They are fundamental to maintaining trust between the government and the public," says Tina Jonas, a study group member and former Under Secretary of Defense (Comptroller) under President George W. Bush. "OMB and Congress can work together to create an accepted standard to collect data on counterterrorism spending. With this standard we can increase

accountability, transparency, and demonstrate effective use of funds for the common security of our nation."

The Stimson Center is a nonpartisan policy research center working to solve the world's greatest threats to security and prosperity.

Stimson Center: Innovative Ideas Changing the World

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STIMSON

Announcement

First Full Accounting of US Counterterrorism Finds US has Spent \$2.8 Trillion

For Immediate Release

May 16, 2018

Contact: Audel Shokohzadeh, ashoko@stimson.org, 202.478.3419

Washington, DC: From 2002 to 2017, the United States spent \$2.8 trillion on counterterrorism, including \$175 billion in 2017 —an eleven-fold increase over 2001 levels- and a peak of \$260 billion in 2008, according to a groundbreaking new report from a study group convened by the nonpartisan Stimson Center. In addition to being the first accounting of cross-government spending on counterterrorism, the report, *Protecting America While Promoting Efficiencies and Accountability*, tracks funding changes across nearly two decades of shifting counterterrorism strategies, identifies concerns about the lack of transparent and accurate basis from which to assess US counterterrorism policy, and makes recommendations for redress. This report, as well as a fact-sheet released by the Security Assistance Monitor on counterterrorism aid to Africa and beyond, provide some of the first sets of data on counterterrorism spending by the U.S. government.

"For over 17 years, policymakers and the public have been unable to determine how much we spend on counterterrorism," says Stimson Fellow and study group director, Laicie Heeley. "Now for the first time, we can point to a figure and say 'we think we have spent this much on counterterrorism since 9/11.' With the important first steps taken by this study group, and as

the Pentagon shifts its strategic objectives, we can begin to have an honest conversation about how to protect America while upholding our values and being mindful of taxpayer dollars."

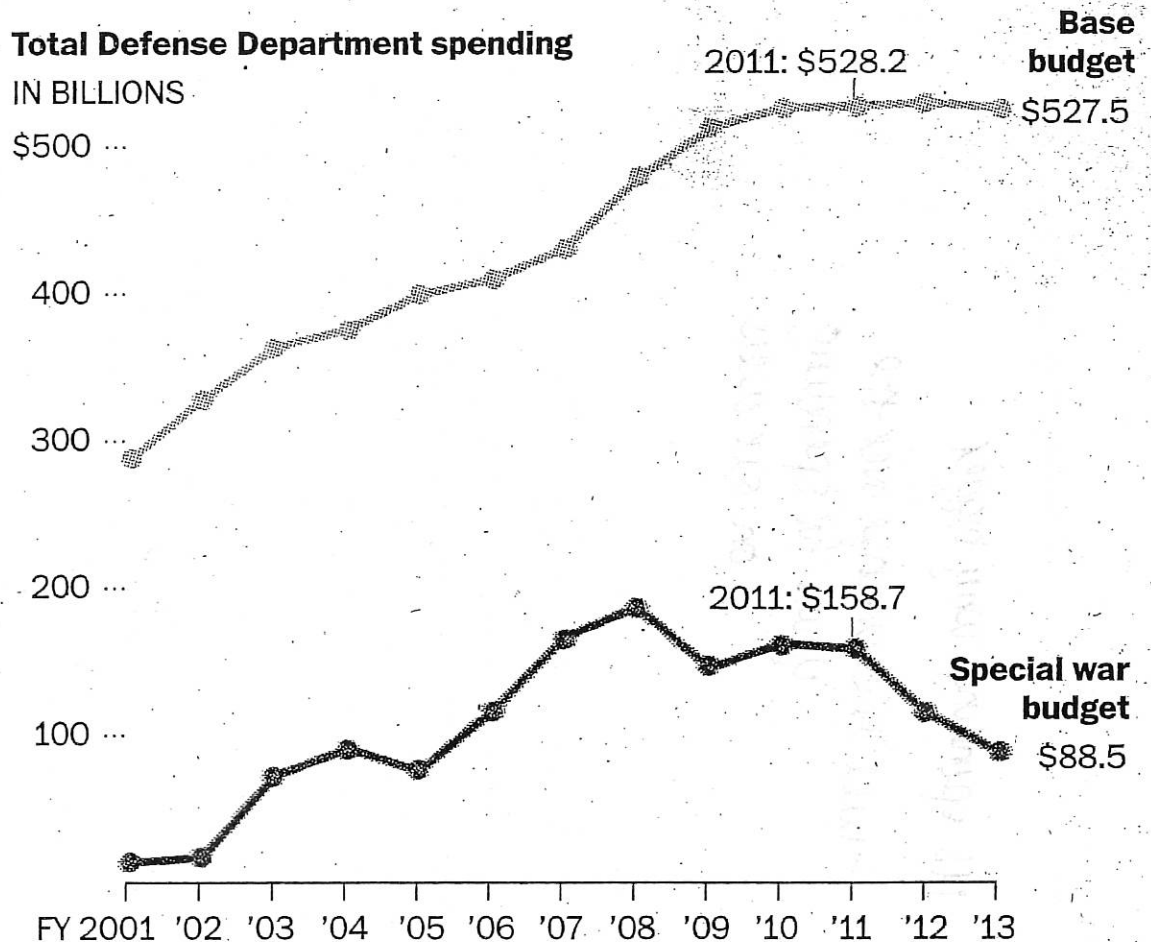
The six-member study group was directed by Laicie Heeley and includes Amy Belasco, Mackenzie Eaglen, Luke Hartig, Tina Jonas, Mike McCord, and John Mueller. This group of senior-level participants with backgrounds in U.S. government, academia, and private industry, and that cuts across party lines, also finds that there is no governmentwide definition of counterterrorism spending. This lack of a consistent definition limits the ability of policymakers and the public to gain accurate spending data and make rational policy assessments.

Defense spending since Sept. 11 attacks

The nation's special war budget has decreased 44 percent over the past three fiscal years as the war in Iraq ended and the war in Afghanistan has wound down. Base budget spending has been about the same.

Total Defense Department spending

IN BILLIONS



Note: Supplemental and relief spending not shown.

Source: Defense Department

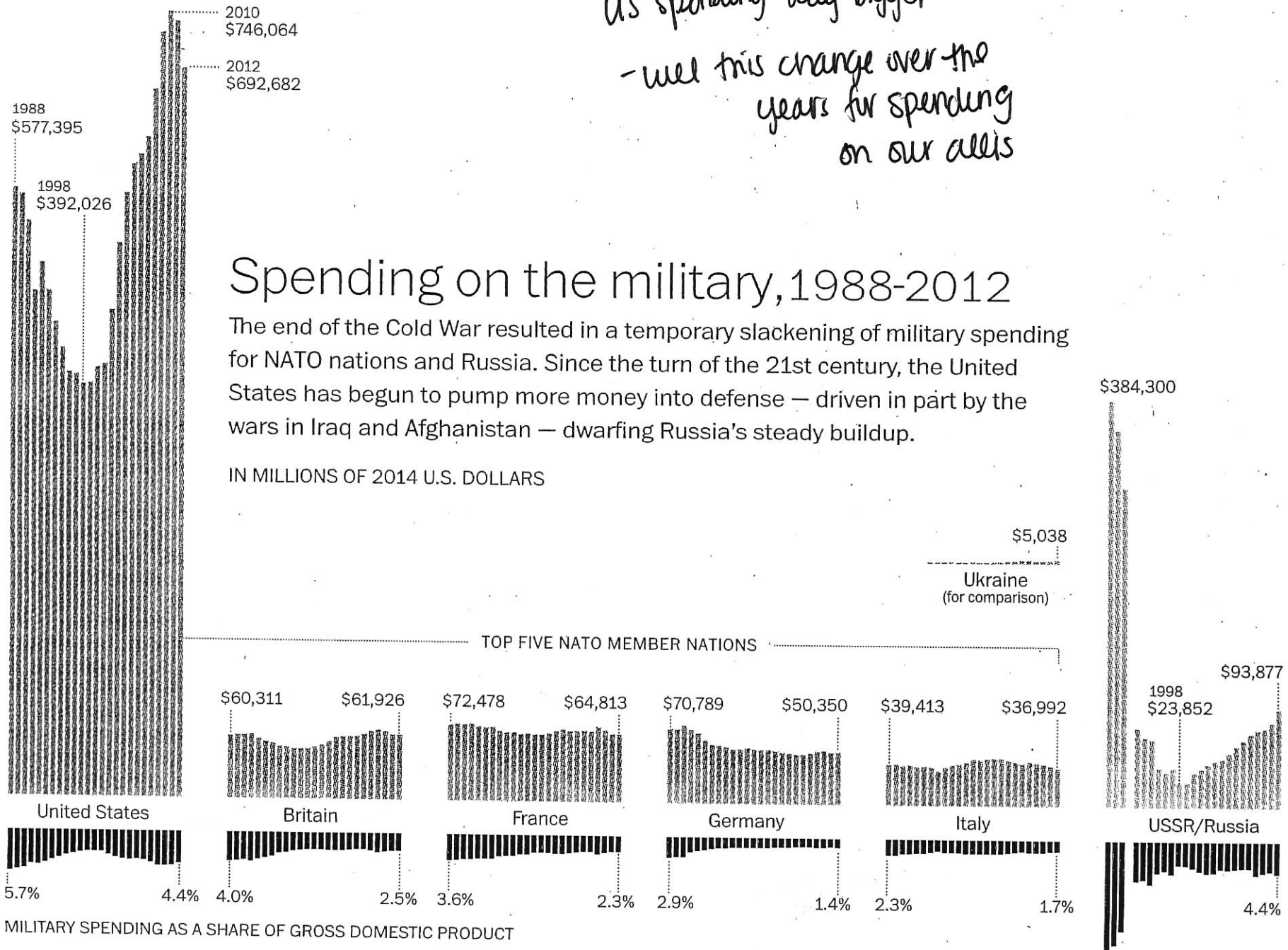
THE WASHINGTON POST

US spending way bigger
- well this change over the
years for spending
on our allies

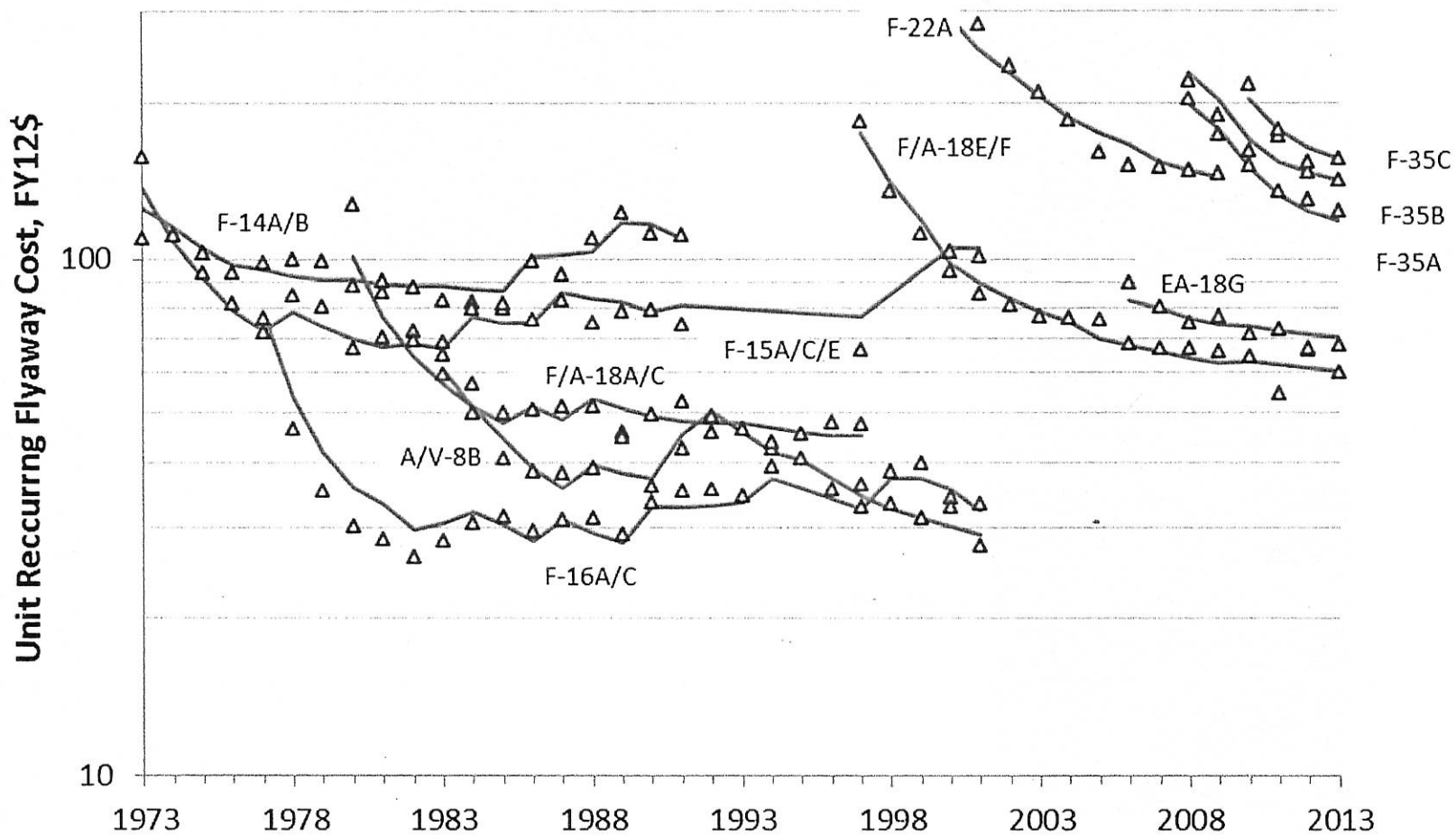
Spending on the military, 1988-2012

The end of the Cold War resulted in a temporary slackening of military spending for NATO nations and Russia. Since the turn of the 21st century, the United States has begun to pump more money into defense — driven in part by the wars in Iraq and Afghanistan — dwarfing Russia's steady buildup.

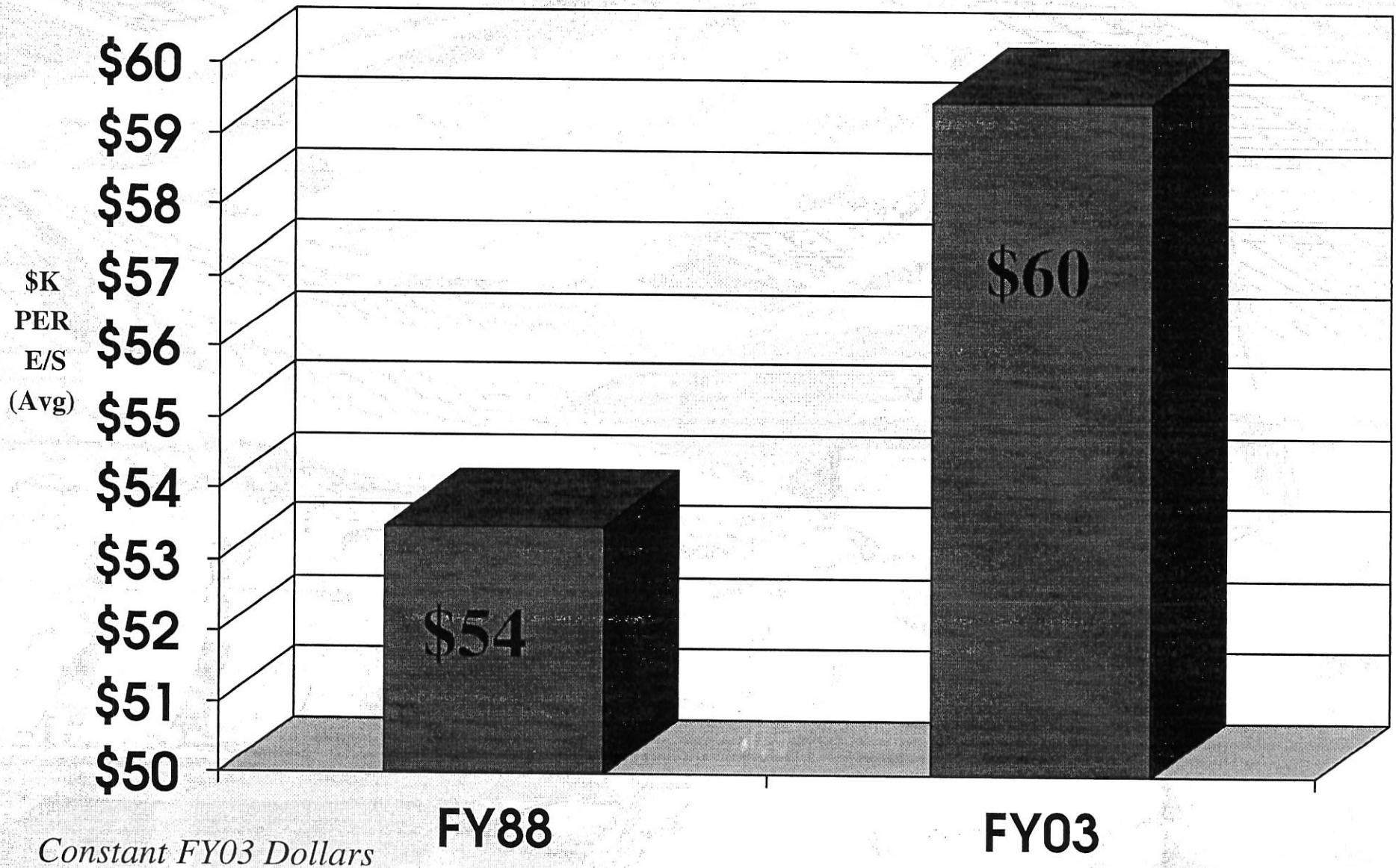
IN MILLIONS OF 2014 U.S. DOLLARS



*cost of aircraft
but it changed over time*

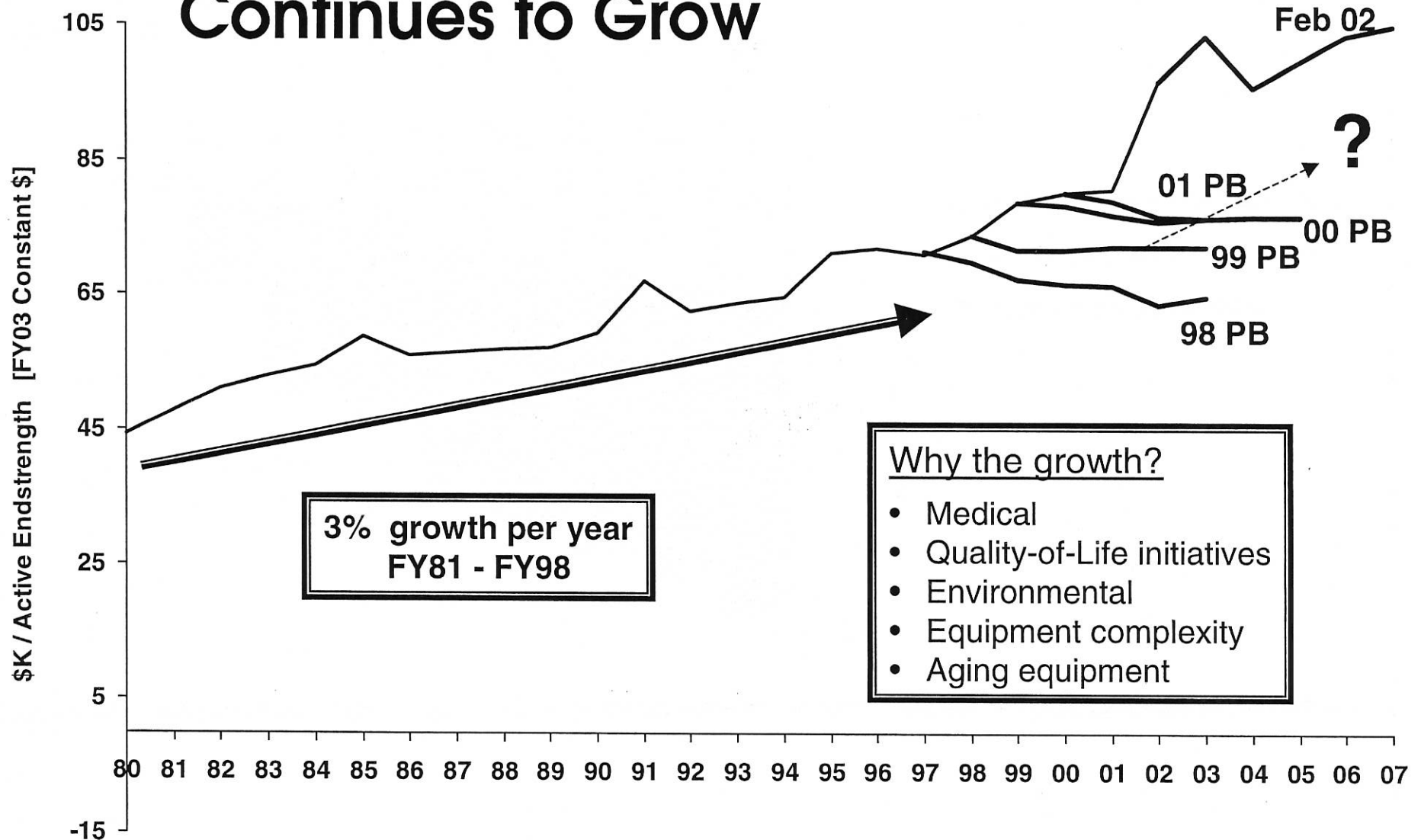


Active Military Personnel

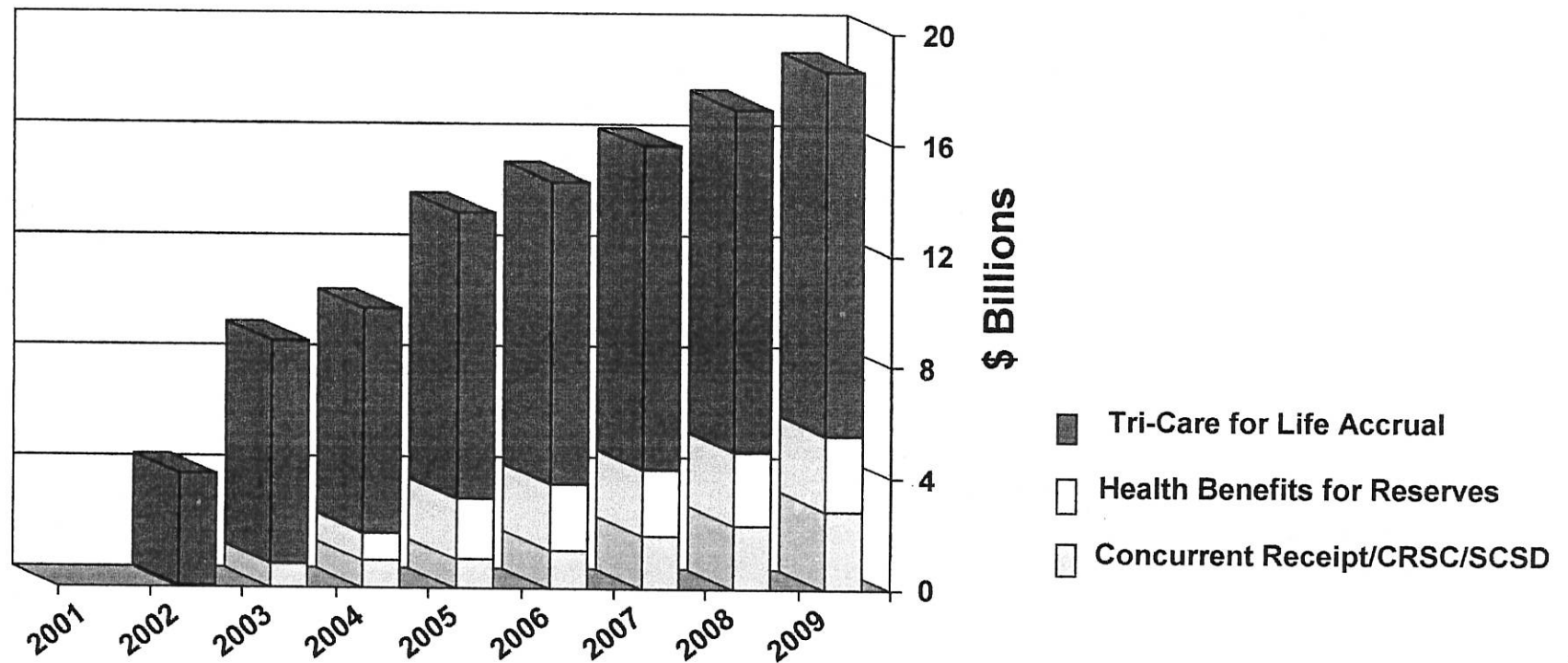


Constant FY03 Dollars

O&M Spending Per Capita Continues to Grow



Entitlement Growth within the DoD Budget



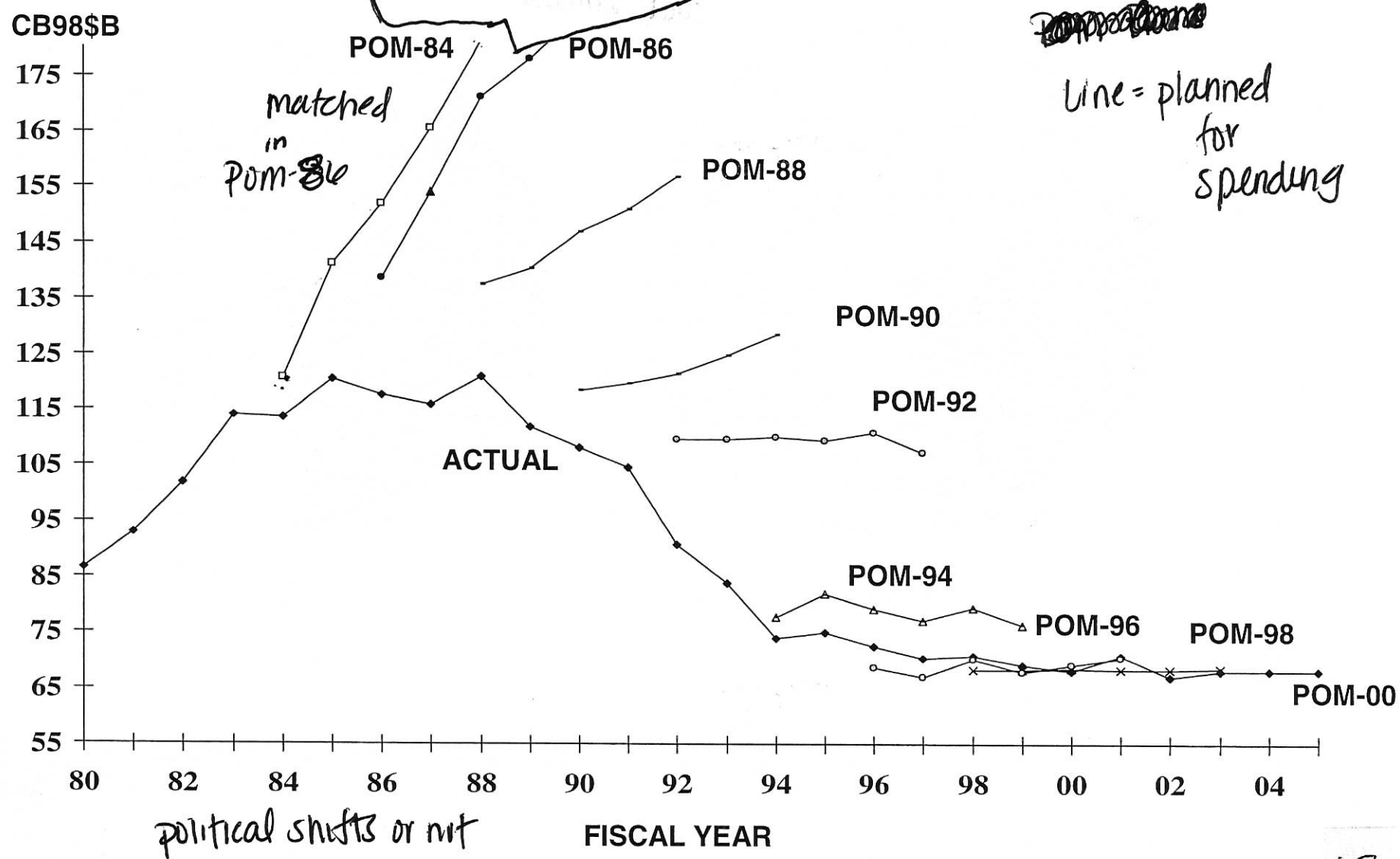
FY 2004 Data

Three tale chart

Point: expectations long reliability

18 months
done in advance
5 year spending
plan

NAVY FUNDING OUTLOOK HISTORICAL TRENDS

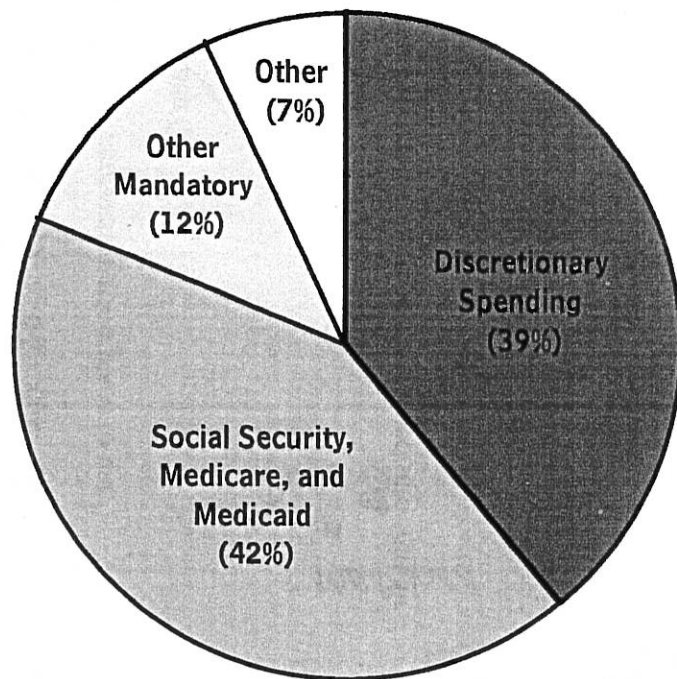


CBO



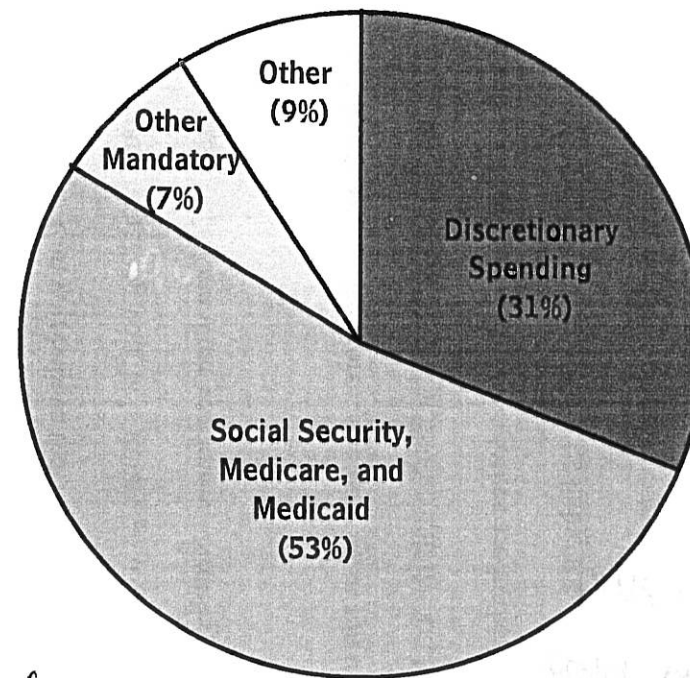
Spending, by Category, 2005 and 2015

2005



Total: \$2,473 Billion

2015

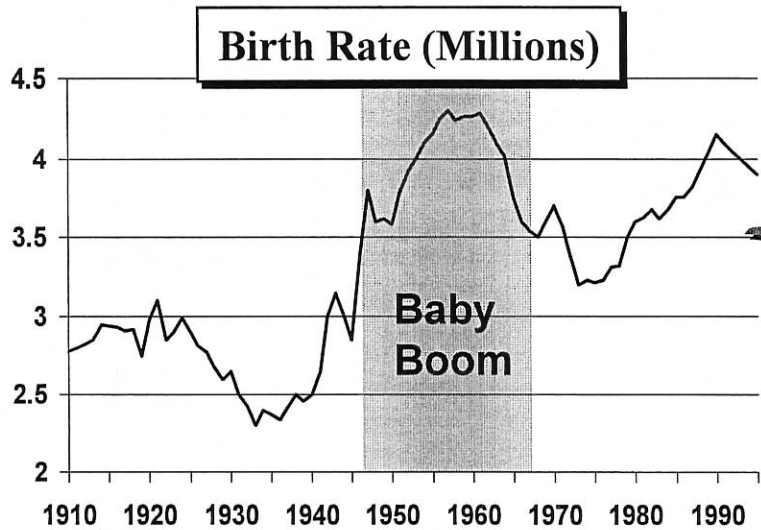


Total: \$3,905 Billion

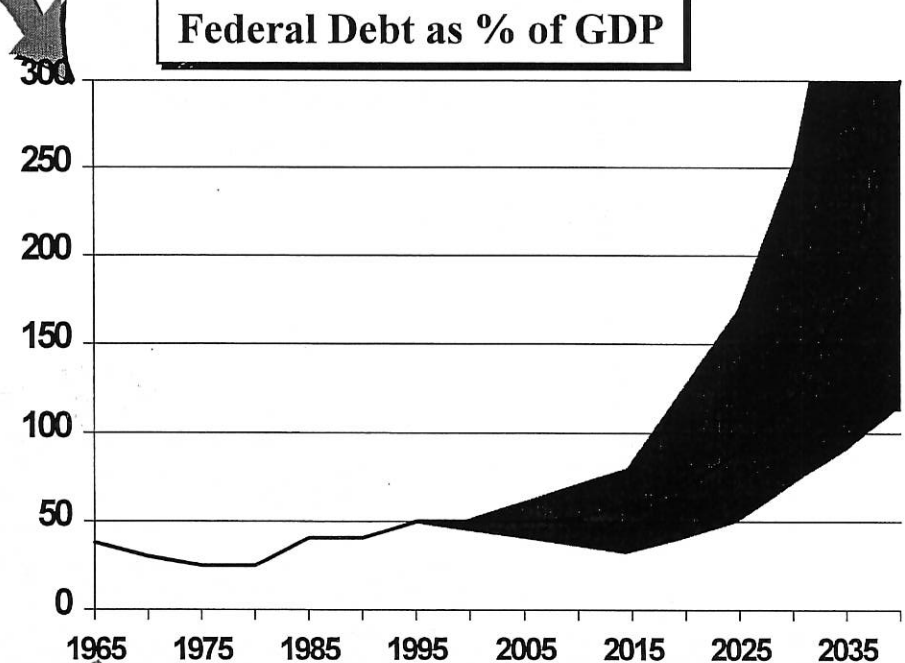
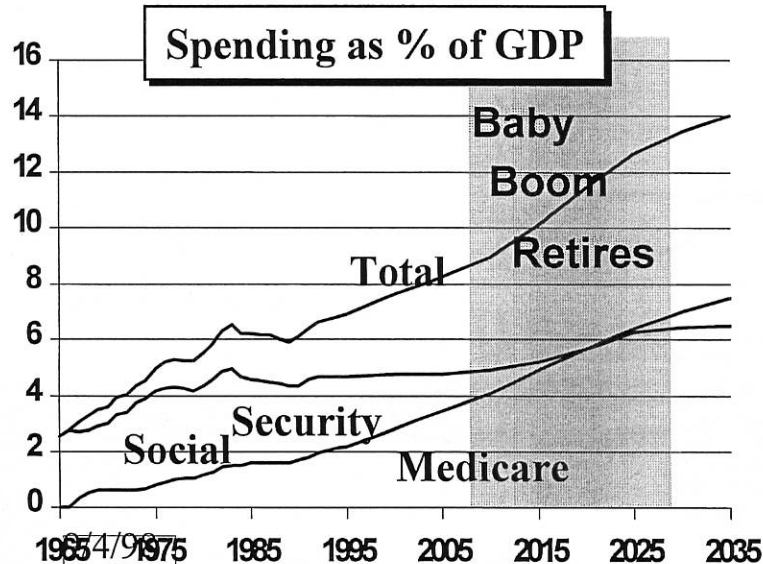
1. pressure from
entitlement programs
growing 10%

2. greater pressure on
defense as other spending grows

Long-Term Outlook



Without reforms, growth of entitlement programs by the mid-21st Century result in rapid increases to the federal debt.



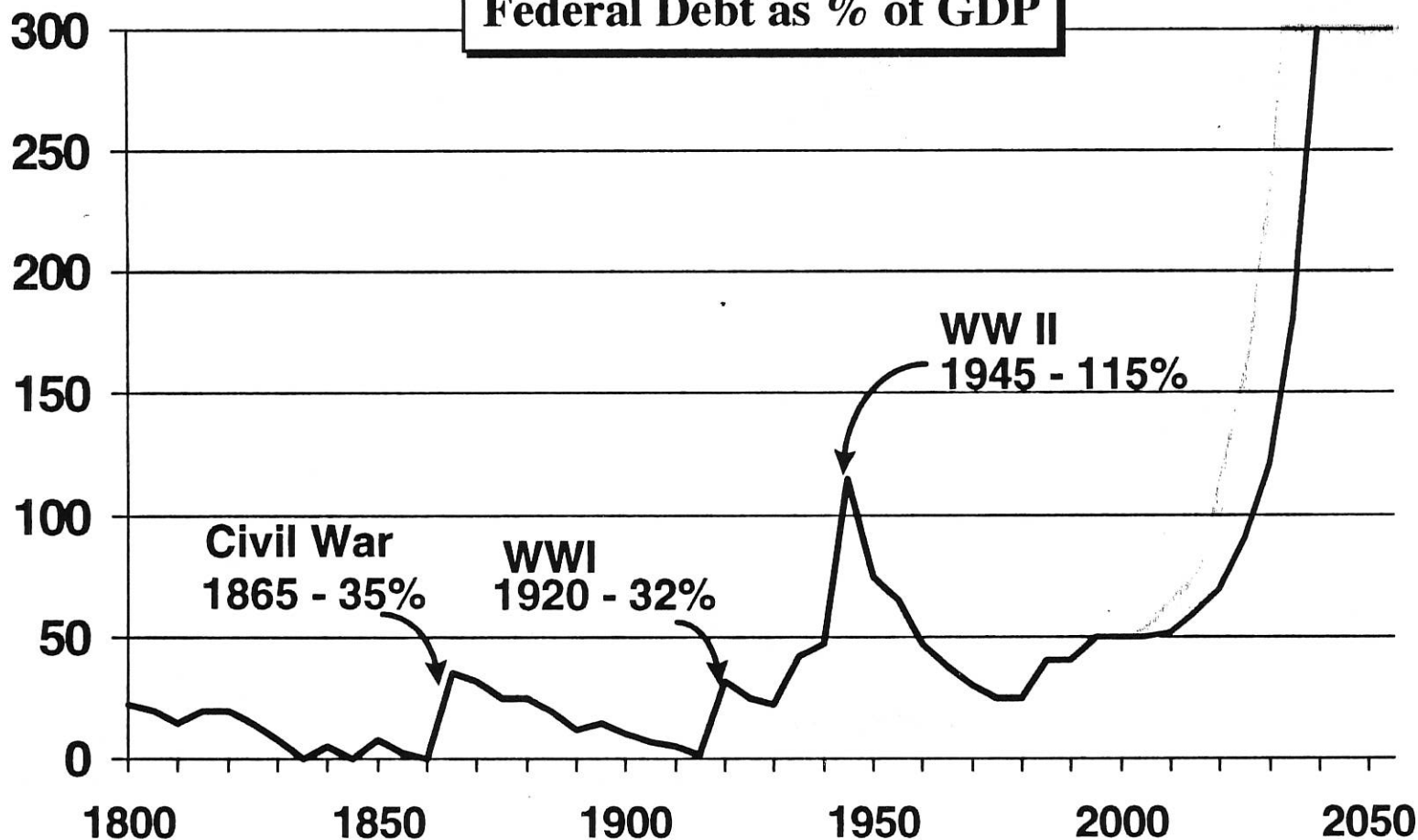


DEMOGRAPHICS/ECONOMICS BEYOND '02

(HISTORICAL PERSPECTIVE)

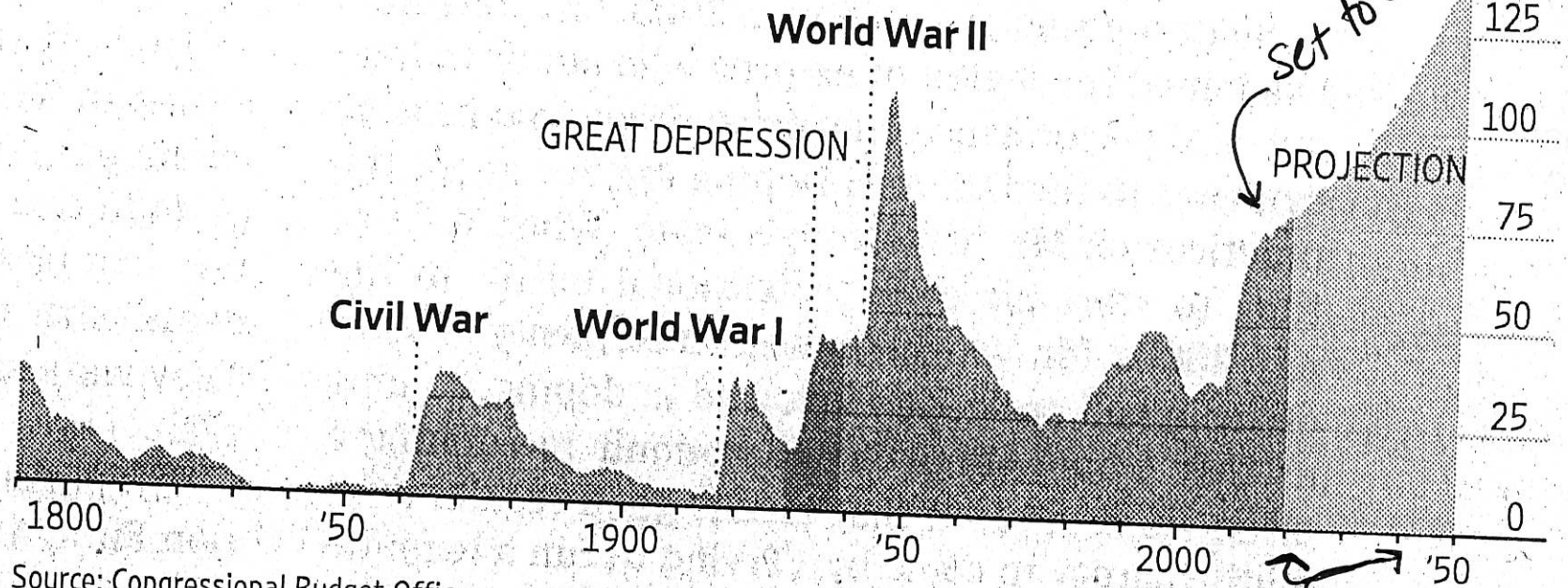
% of GDP

Federal Debt as % of GDP



Joint
Chief
of
Staff

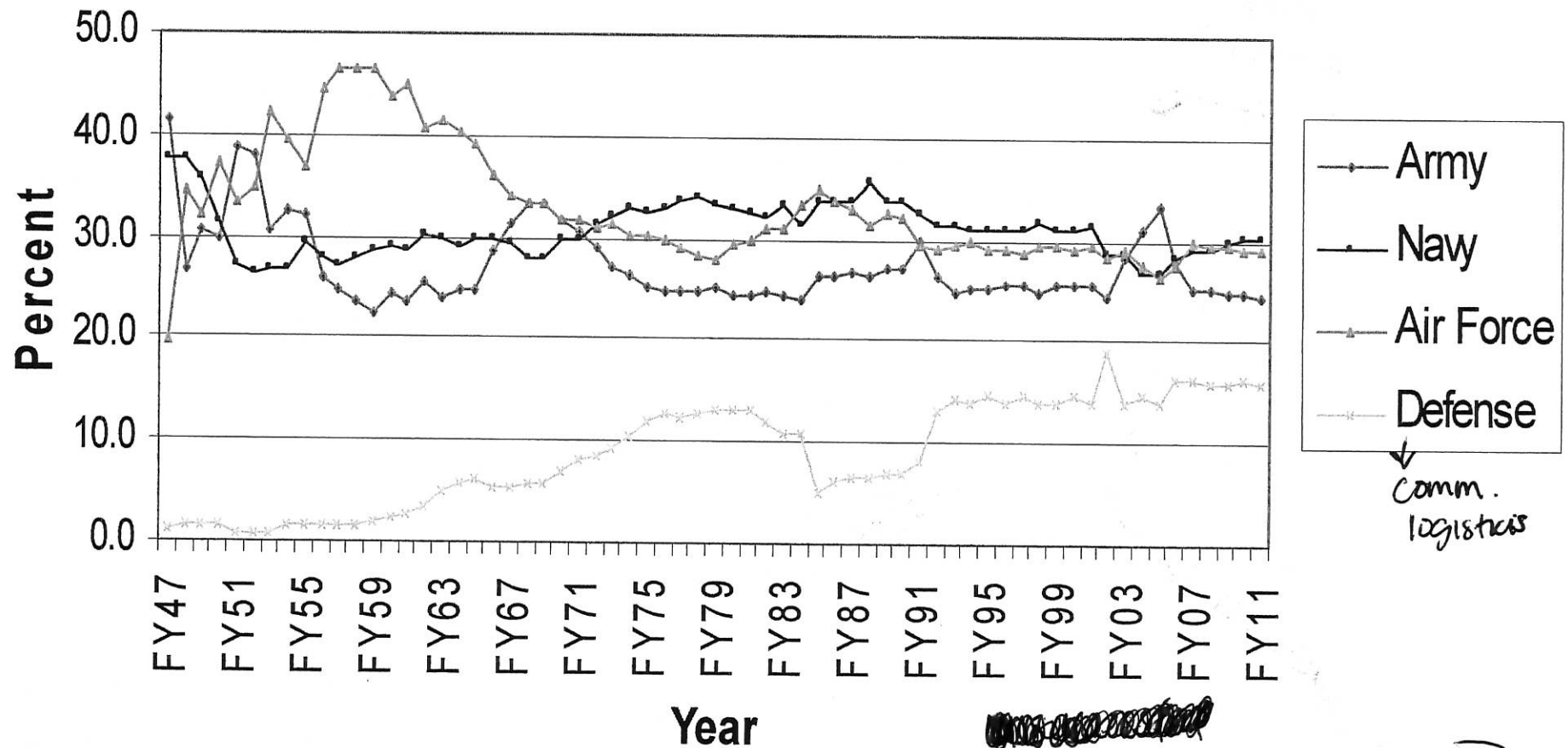
Federal debt held by the public as a percentage of gross domestic product



Source: Congressional Budget Office

Set to continue to rise
increasing debt b/c of spending

TOA as a Percent of Defense Budget

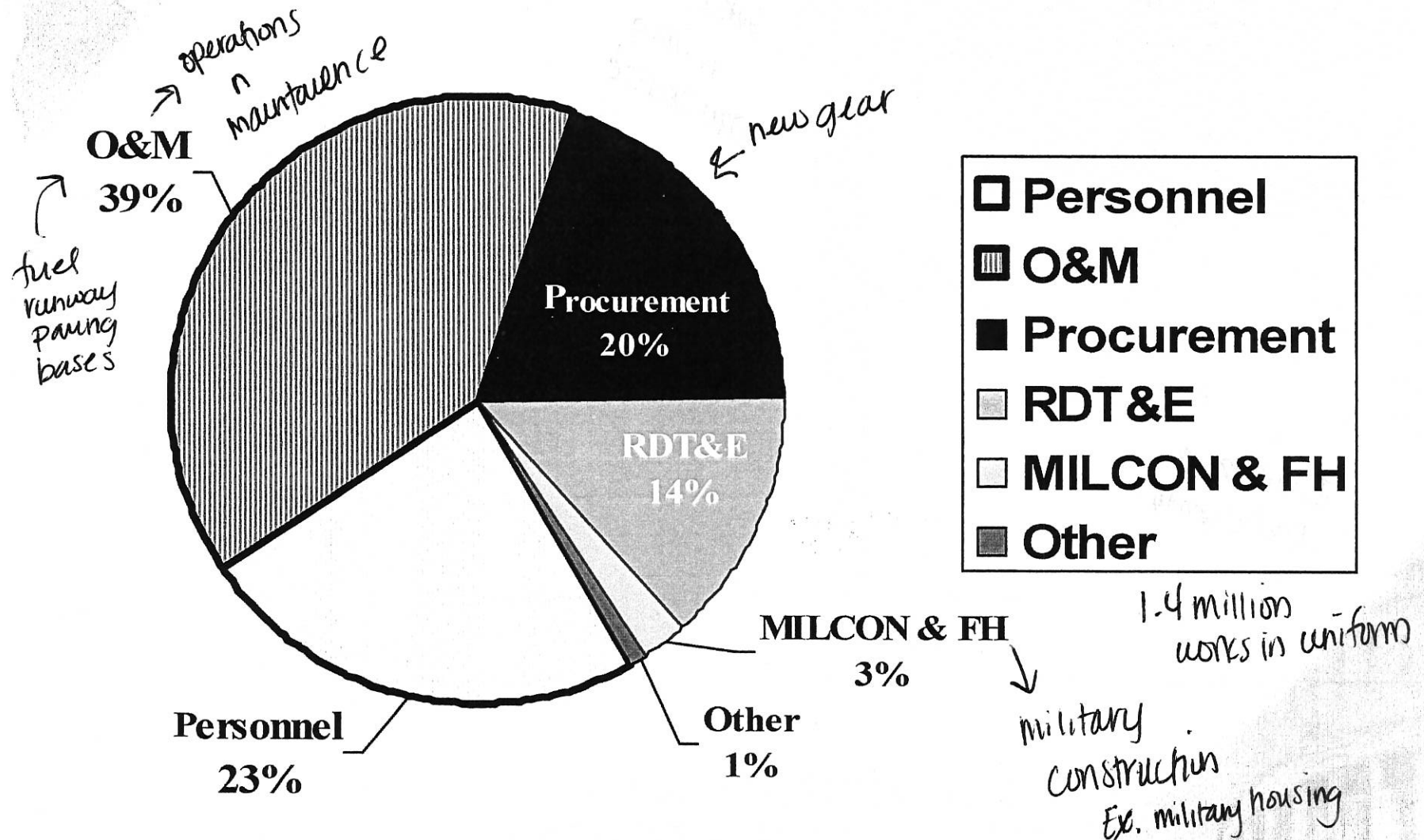


~~fraction going to services are~~
 fraction going to services are
 stable and constant

In FY 2006

change or keep
5 years down the line

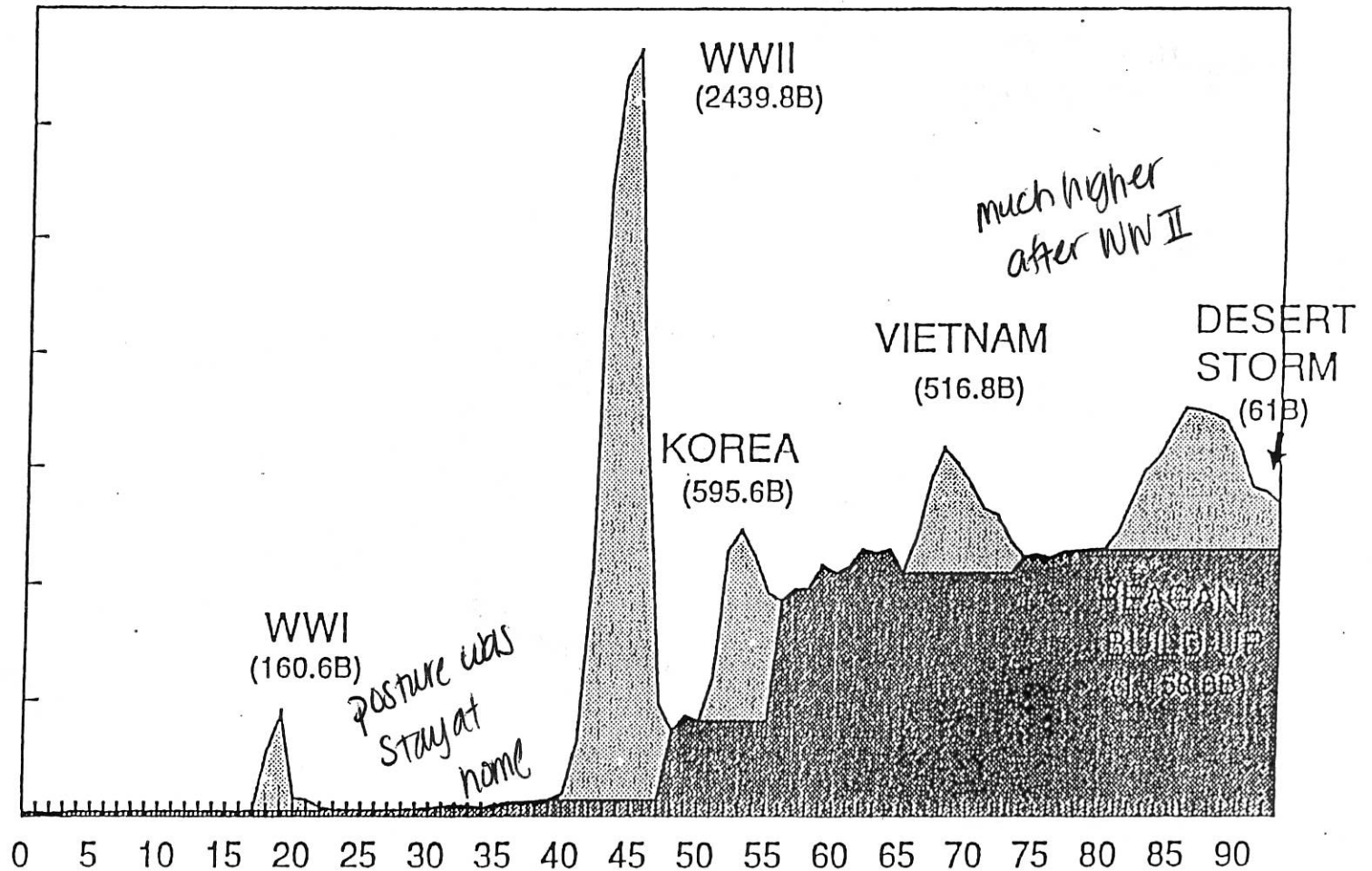
O&M and Personnel Consumed 2/3 of the Funds



NATIONAL DEFENSE BUDGET, 1900-1991

(COST OF MILITARY BUILD UP)

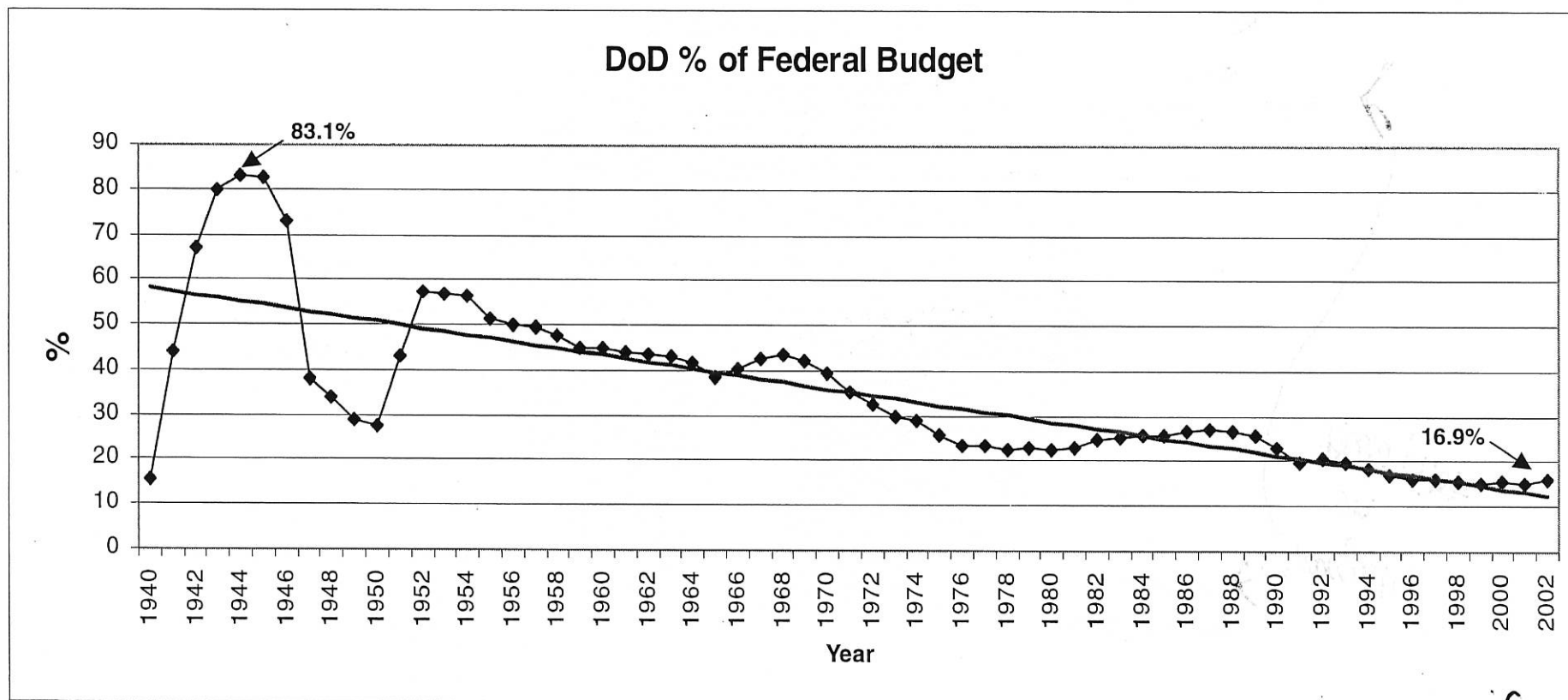
BILLIONS (FY92 CB\$)



DOIC, I, HISTORICAL, 1047702

how spending of defense flowed
for years

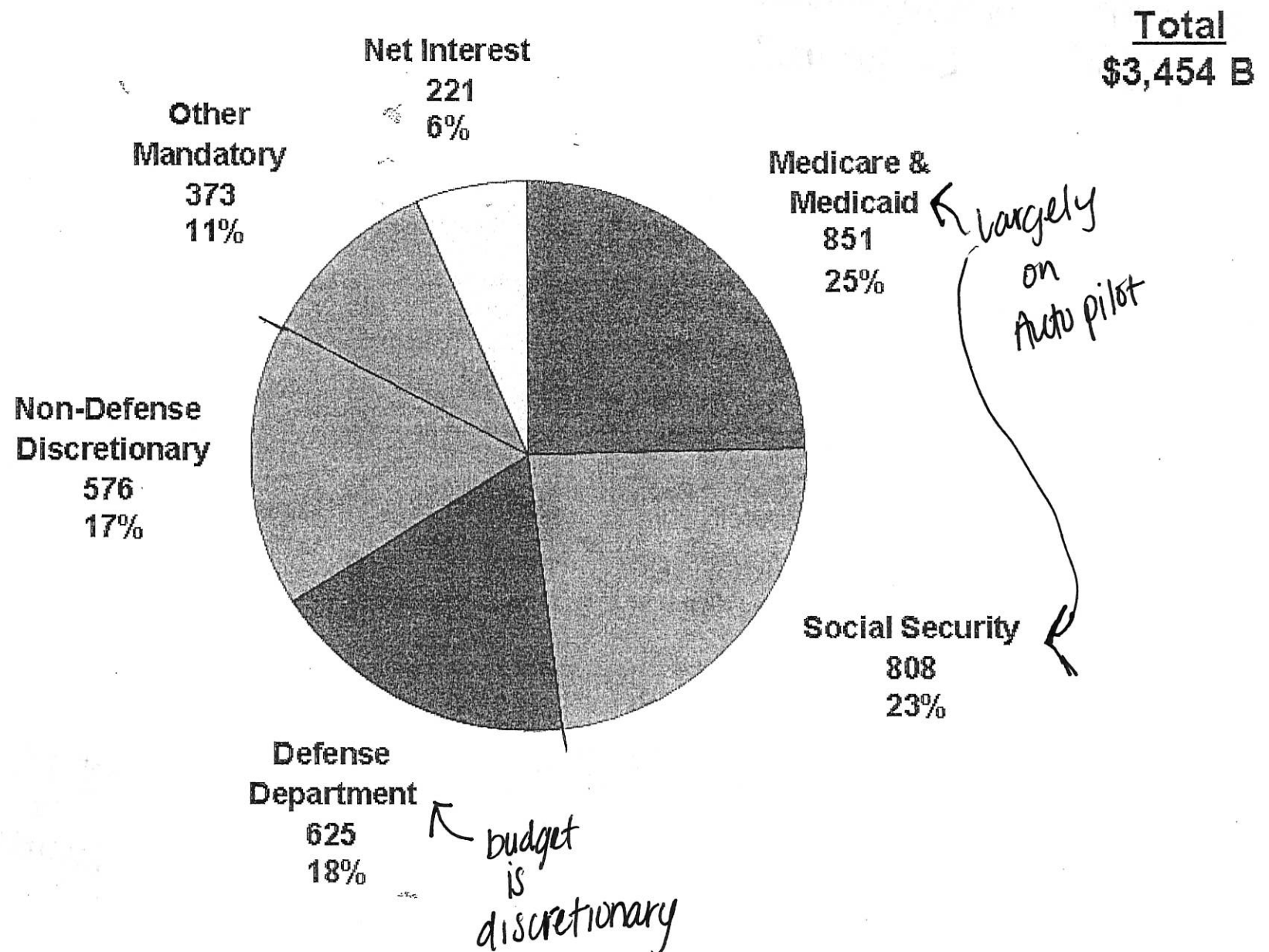
starting
at
WWII



Downline →
entitlement program
keeps going up

judge if
downline
will
continue?

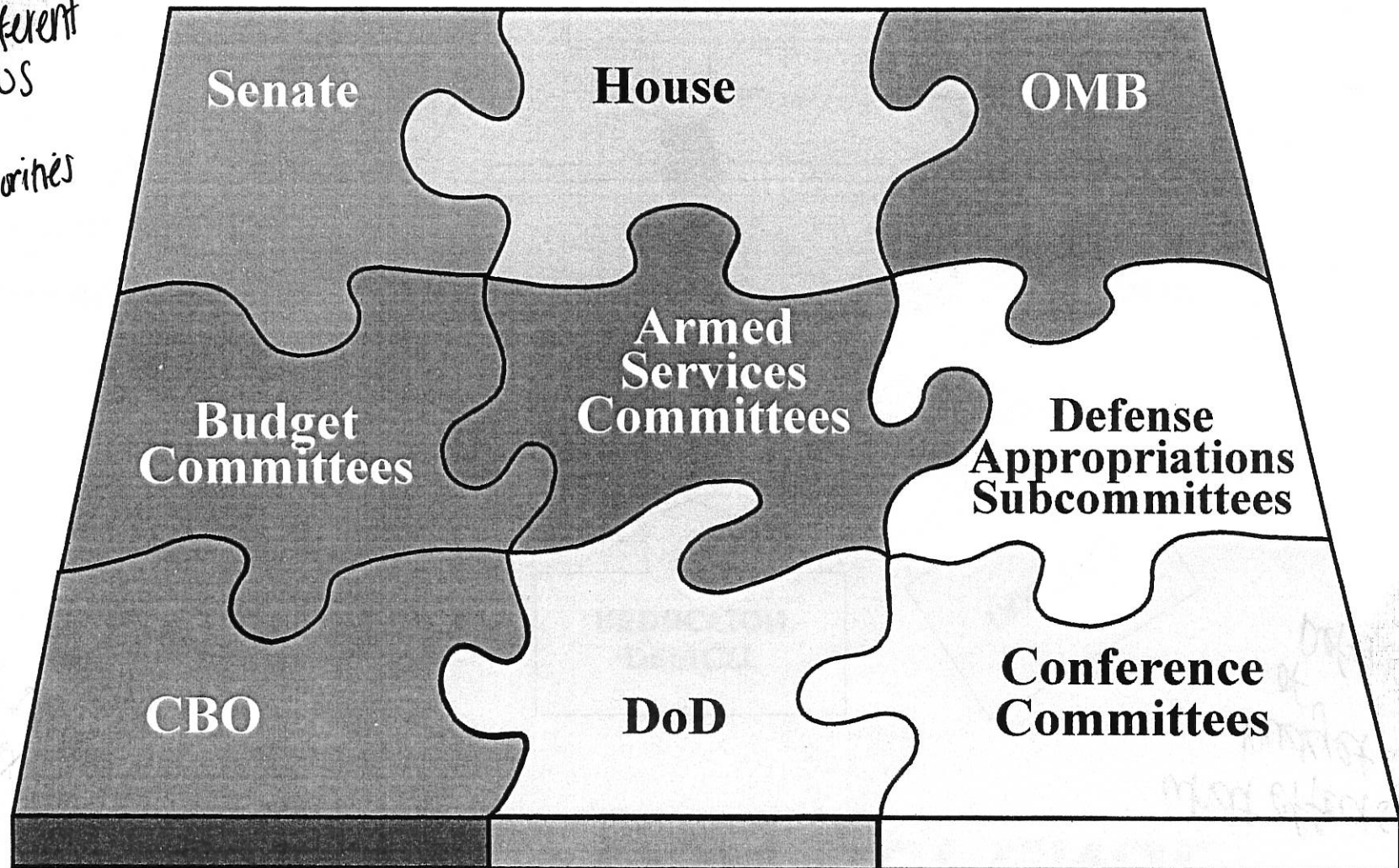
U.S. Federal Spending – Fiscal Year 2013 (\$ Billions)



Source Data: CBO Historical Tables

BUDGETING FOR DEFENSE: SOLVING THE PUZZLE

*All different
views
and
priorities*



DOLLARS FOR DEFENSE

All are pressure of defense budget

what effects budget of defense

