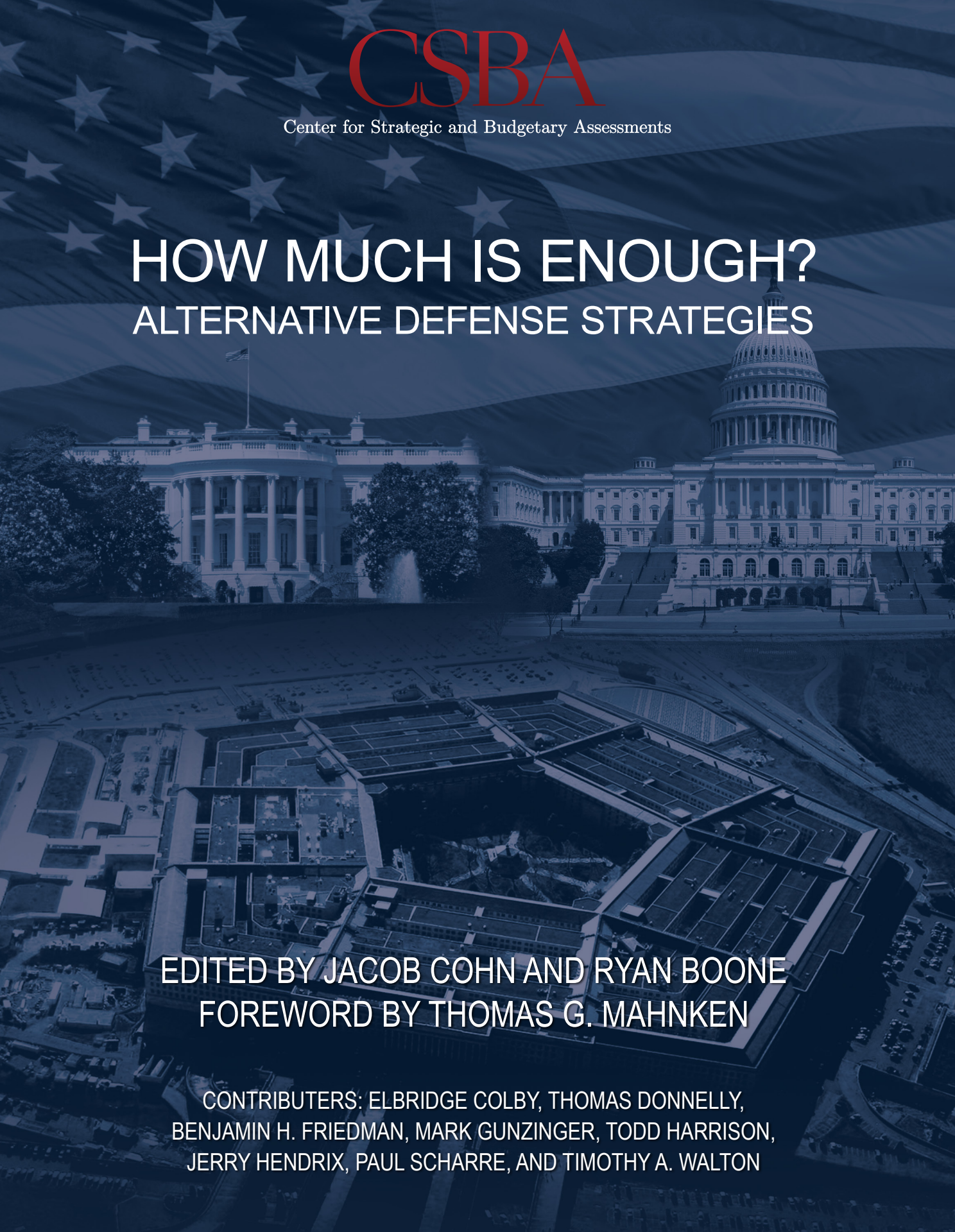

CSBA

Center for Strategic and Budgetary Assessments

HOW MUCH IS ENOUGH?

ALTERNATIVE DEFENSE STRATEGIES

EDITED BY JACOB COHN AND RYAN BOONE

FOREWORD BY THOMAS G. MAHNKEN

CONTRIBUTERS: ELBRIDGE COLBY, THOMAS DONNELLY, BENJAMIN H. FRIEDMAN, MARK GUNZINGER, TODD HARRISON, JERRY HENDRIX, PAUL SCHARRE, AND TIMOTHY A. WALTON

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2016

ABOUT THE CENTER FOR STRATEGIC AND BUDGETARY ASSESSMENTS (CSBA)

The Center for Strategic and Budgetary Assessments is an independent, nonpartisan policy research institute established to promote innovative thinking and debate about national security strategy and investment options. CSBA's analysis focuses on key questions related to existing and emerging threats to U.S. national security, and its goal is to enable policymakers to make informed decisions on matters of strategy, security policy, and resource allocation.

ABOUT THE EDITORS

Jacob Cohn is a senior analyst at the Center for Strategic and Budgetary Assessments, conducting research and analysis for both the Strategic Studies and the Budget Studies programs. His primary areas of interest concern trends in the overall defense budget and specific acquisition programs, long-range strategic planning, and the utilization of wargames to develop future operational concepts. Prior to joining CSBA in 2014, Mr. Cohn served as a Peace Corps Volunteer in West Africa, worked in the Special Operations/Low Intensity Conflict office at the Pentagon, and was a grants and budget manager for CARE USA. Mr. Cohn holds a B.A. in Economics and Math with Highest Honors from Emory University and an M.A. in Strategic Studies and International Economics from Johns Hopkins University's School of Advanced International Studies (SAIS).

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Thomas G. Mahnken

The report that follows contains the results of CSBA's 2016 joint think thank exercise on strategic choices for defense.

This is the third such exercise that CSBA has convened. The first occurred in May 2013, when CSBA invited three organizations—the American Enterprise Institute (AEI), the Center for a New American Security (CNAS), and the Center for Strategic and International Studies (CSIS)—to develop alternative strategies to rebalance the Department of Defense's major capabilities and then test their strategies using two budget scenarios for the period from 2014–2023. One scenario assumed the full Budget Control Act (BCA)-level cuts (a reduction of $521 billion across the period), and one assumed cuts of only half that magnitude (e.g., $247 billion). The second took place in February 2014, with the same organizations, but this time the exercise examined strategic alternatives for the period from 2015–2024. It required participants to consider cuts of $331 billion for the full BCA scenario and $199 billion for the half BCA scenario.

The current exercise occurred in the fall of 2016 against the backdrop of growing debate over America's role in the world, American grand strategy, and the capabilities needed for that strategy to succeed. To capture fully the range of strategic choices under discussion, CSBA invited AEI, the Cato Institute, CNAS, and CSIS to develop their preferred vision of American strategy and to identify the forces needed to carry out that strategy. The teams then used CSBA's Strategic Choices Tool to cost their preferred strategies.

We hope that the results of this exercise will inform discussion and debate over defense priorities in coming months and years.

Thomas G. Mahnken is the President and CEO of the Center for Strategic and Budgetary Assessments.

Introduction

Twenty-five years after the end of the Cold War, the United States once again faces the need to prepare for great power competition and confrontation. Russian aggression along the eastern front of NATO presents military challenges to European security not seen in decades. China's military modernization and coercive behavior toward U.S. allies and partners threaten stability in the Asia-Pacific region. Both nations are disrupting an international order that has long provided relative peace and prosperity for the United States, its allies and partners, and much of the rest of the world.

The shifting strategic environment is further complicated by the enduring dangers of nuclear proliferation and violent extremism, as well as by an evolving set of operational-level military challenges. Recent military innovation, driven by the increasing "informationization" of potential rivals and their adoption of advanced conventional and asymmetric capabilities, threatens the traditional means with which the United States projects power. Confronting these strategic and operational challenges will require U.S. defense leaders to rethink how they prioritize resources and how they view the use of force.

The Department of Defense's (DoD) ability to plan for these trends has been hampered by the financial constraints imposed by the Budget Control Act (BCA). These difficulties have been further compounded by the inability to reform the military personnel compensation system, stem the growth in acquisitions and operations costs, divest excess infrastructure, retire legacy systems of decreasing utility, and rebalance the Active and Guard/Reserve components of the U.S. armed forces.[1] Although the overall level of defense funding is important, DoD must also focus on how it spends its budget. Given the strategic and operational challenges confronting the United States, DoD must reevaluate *how* it operates—its operational concepts—in addition to rebalancing its portfolio of capabilities and its force structure to defend American interests from ever-changing threats.

1 For more on how compensation reform can save costs while improving personnel satisfaction, see Todd Harrison, *Rebalancing Military Compensation: An Evidence-Based Approach* (Washington, DC: Center for Strategic and Budgetary Assessments, 2012).

With this context, the Center for Strategic and Budgetary Assessments (CSBA) convened groups of experts from The American Enterprise Institute (AEI), The Cato Institute, The Center for a New American Security (CNAS), The Center for Strategic and International Studies (CSIS), and CSBA to explore alternative defense strategies for a post-BCA world.[2] CSBA asked the teams to answer three core questions without the burden of artificial constraints on defense spending:

- *What should American defense strategy be?*
- *What capabilities, investments, and force structure might that strategy require?*
- *What would such a military cost?*

Their answers to these questions drive this report.[3]

The Strategic Choices Tool

CSBA's Strategic Choices Tool is a straightforward, adaptable, and strategy-driven program that allows users to modify planned military force structure, modernization, and defense spending over the next decade. [4] Developed by CSBA in 2013, the Strategic Choices Tool has been used by thousands of players across dozens of exercises to wrestle with the strategic and financial challenges facing defense policymakers. It draws on actual and projected budget data, offering a unique ability to link strategy-driven choices with real-world spending implications. Rather than build a budget and military from the ground up, it instead allows users to alter current plans through an intuitive web-based platform that automatically tracks changes to defense spending and force structure. Moreover, it can adapt in real time to user requests. CSBA added almost twenty new options over the course of this exercise to the almost 1,400 already present in the tool.

The Strategic Choices Tool is designed to illuminate challenges facing the United States or other countries to better understand the linkages between defense resourcing and force structure. Users are asked to conduct long-term defense planning, develop new operational concepts, assess alternative force structures and postures, and identify areas for greater investment or divestment. The tool allows teams to see the resulting force structure and

2 The strategies devised and the choices implemented by each team reflect their personal views and not institutional perspectives.

3 While written descriptions of each team's strategy are included here, slides outlining each team's strategy and choices can be found here: http://csbaonline.org/uploads/documents/Joint-Think-Tank-Compiled-Briefings.pdf.

4 The Strategic Choices Tool covers the National Defense 050 budget function. While discretionary and mandatory Department of Defense spending makes up about 96 percent of this budget function, it also includes spending on nuclear weapons and nuclear reactors for military ships, as well as funding for certain activities of other agencies such as the Selective Service Agency and parts of the Coast Guard and the Federal Bureau of Investigation. For a formal definition of the 050 budget function see, U.S. House of Representatives Committee on the Budget, "Budget Functions," available at http://budget.house.gov/budgetprocess/budgetfunctions.htm#function050.

financial effects of their choices in real time, though it does not assess the risk or wisdom of specific choices.

Teams used CSBA's Strategic Choices Tool to recommend adjustments to the President's FY17 budget request (PB17) and rebalance defense capabilities over the next two Future Years Defense Programs (FYDP), covering FY18–22 and FY23–27.

Exercise Context

Each team was asked to develop its own alternative defense strategy and rebalance DoD's major capabilities given their assessment of future security challenges. CSBA asked the teams to consider how DoD should be prepared to operate over the next ten years and beyond, what overarching operational concepts should drive the Services, and what mix of capabilities will be needed to support these concepts. Teams focused on the approximate resourcing and force structure requirements necessary to implement their strategy. Although defense resourcing is never truly unconstrained, this exercise sought to explore strategies independent of the arbitrary BCA caps or political constraints.

Driven by their view of threats to national security and the best strategy for addressing them, each team rebalanced DoD's force structure and investments over two (2) five-year moves. Teams determined force structure and capability investments across twelve areas, such as air, sea, ground, personnel, readiness, and research and development (R&D). They started with the President's FY17 budget request as the baseline, then teams added or cut funding from specific elements of the program of record. In addition, teams were free to pursue alternative capabilities not currently reflected in the program of record, including systems sold by allied countries, previously canceled in the United States, or arising from new technologies. Other options modified current programs and systems in preparation for new missions or to enhance sustainability, and additional options allowed teams to alter the basing and posture of the U.S. military. Absent player input, decisions made in the PB17 request remained for the duration of the exercise.

Strategy and resourcing is an iterative process. Teams began the exercise with their ideal vision of the U.S. military over the coming decades, which guided them through successive rounds of analyses concerning how best to address a range of strategic and operational challenges and what tradeoffs would be required. Teams had to make implicit decisions regarding the types of contingencies the military will be asked to engage in, domestic and overseas force posture, nuclear and conventional deterrence, the implications of operational shifts in warfare, and the relative capability portfolios of each of the Services. At the end, teams were asked to describe their final strategy, rationale, major tradeoffs, and associated impacts (near- and far-term). These overviews and a comparison of the team's resulting choices comprise the balance of this report.

Great Powers Don't Pivot

Thomas Donnelly
American Enterprise Institute

Our defense choices in this exercise are an elaboration of the themes articulated in our October 2015 report *To Rebuild America's Military*. Our principal conclusion in that study—that America's deteriorating international position requires an urgent reinvestment in and expansion of U.S. military forces—has only been underscored by events in the interim. In East Asia, in Europe, and especially in the Middle East, a congeries of adversary states and terrorist groups is destroying the post-Cold War order. What was, not long ago, an extraordinarily peaceful, prosperous, and free world is slipping into chaos. America no longer has the luxury of enjoying a "strategic pause" or a "peace dividend" nor even an "offset" that puts off until tomorrow what should have been done yesterday.

Nor can we afford the seeming wisdom of "selective engagement," a strategy defined more by what it does not do rather than what it does: global powers do not "pivot." To withdraw from any of the three critical Eurasian theaters of geopolitical competition—or to pretend to "lead from behind"—is a false economy. As the experience of the Obama Administration makes painfully plain, the harm to the interconnected system of international security—the "world America made"—far outweighs the evanescent benefits of disengagement.

As the exercise demonstrates, the costs of reengagement are hardly minimal. Yet further delay will only increase those costs, not just in dollars but also in lives. And we must accept that it is probably too late to simply repair the old order; what stands before us is, in increasing measure, a task of reconstruction, of creating a new system fit to the demands of a new era in international politics.

The first task is to return American and allied forces to the "front lines." The need for such a reposturing is most apparent in Europe, where NATO has taken the first steps to collectively defend the "no-man's land" created 15 years ago when the Atlantic alliance simultaneously expanded its commitment to Eastern Europe but drew down forces in Western Europe.

Our recommendations here build upon initiatives already underway, turning a tentative trip-wire into a more robust deterrent.

We made similar investments to buttress deterrence against creeping Chinese expansionism in East Asia. While we believe it is necessary to puncture any "anti-access, area-denial" (A2/AD) balloon, we don't think that is sufficiently effective to reassure front-line friends and our allies; we must reclaim the ability to project power all the way across the Pacific.

Thirdly, the Obama years tell us that the only thing more dangerous than being in the Middle East is not being in the Middle East. When we compare the balance of power in the Middle East in 2009 to that in 2016, we see the consequences of American withdrawal from North Africa to South and Southeast Asia. Nor can we delude ourselves that "what goes on in the Middle East stays in the Middle East." The return of Russia as a provocative force, an accelerant to Iran's bid for regional hegemony, the crack-up of mainstream Sunni regimes, and the metastasizing of *jihadi* terror into the caliphate of the "Islamic State" elevates our task from deterrence to "compellence." There is no stable or acceptable *status quo* to preserve.

In sum, anything less than a military with a "three-theater" capacity and capability—across a wide spectrum of operational, tactical, and technological challenges—and with a sufficient reserve for rapid and sustained reinforcement falls short of the challenges of our time. And any failure to respond in a timely way ensures that the challenges will grow.

Thus, our budget and investment choices reflect a buy-what-you-can, build-what-you-must attitude. We are particularly anxious to field stealthy aircraft *en masse*, and thus, in addition to maximizing purchases of the F-35 and B-21, we restarted the F-22 line; we believe that having a large fleet of every-day stealthy planes—rather than a tiny fleet of single-mission aircraft that require exquisite maintenance—and advanced munitions will go a long way toward puncturing adversaries' A2/AD networks and creating the conditions for sustained power projection.

Even so, reclaiming sea control will remain a challenge. To rapidly field a sufficient fleet with air-and-missile defense capability, we have proposed restarting and redesigning the *Zumwalt*-class destroyer; at nearly 15,000 tons and with turbines capable of generating 78 megawatts of power, the *Zumwalt* can be a platform for advanced electronic armaments such as lasers and electromagnetic rail guns to protect surface ships against missile attack. Moreover, we want to fill the decks of Navy carriers and Marine amphibious ships with the jump-jet F-35B, which can disperse and deploy to forward-arming and refueling points ashore, thus "swarming" anti-access networks from many aspects at once.

A third area of urgent investment is undersea warfare. In addition to ramping up purchases of *Virginia*-class attack submarines—under current plans, the Navy's submarine fleet will be far too small for global requirements—we believe that a variety of unmanned underwater vehicles can be a force multiplier. Further, in narrow seas such as the Baltic, the eastern Mediterranean, the South China Sea, or, crucially, the straits that connect the South China and

Philippine Seas, permanent underwater sensors can help preserve the U.S. Navy's command of the subsurface environment.

Finally, we believe the U.S. Army cannot be hamstrung between the demands of irregular and high-intensity land operations and needs more organic firepower for both missions—in many ways, the debate over the A-10 and fixed-wing close air support is miscast. In an era increasingly marked by the proliferation of powerful infantry anti-armor weaponry, there is a need to revive the Ground Combat Vehicle program to give U.S. infantry the mobile, protected firepower it needs. And the Army's ability to supply both fire support to units in combat and to conduct longer-range fires up to several hundred kilometers must be improved.

Our investments totaled $1.3 trillion in added defense spending—a lot of money, even over 10 years. However, it's obviously affordable, even with slow economic growth: we never spent more than 3.4 percent of gross domestic product (conservatives have long postulated a "Four Percent for Freedom" standard) and ended up at about 3 percent. The Congressional Budget Office forecasts that $46.4 trillion of new wealth will be added to the economy over the ten-year period, so we're slicing off just 2 percent of that growth. Nor would such growth exacerbate the federal government's fiscal condition; in the same time, mandatory spending will grow by $8.8 trillion, almost seven times as much as our proposed defense increase.

But our proposal is a value proposition: the benefits of a new American international security order will be measured in peace, expanded human potential, and political liberty—rewards that are good in themselves. This is a uniquely American proposition, as Abraham Lincoln would have understood: conceived in liberty, dedicated to the equality of all, testing whether political systems so conceived and dedicated can long endure.

A Strategy of Restraint

Benjamin H. Friedman
Cato Institute

Between fiscal years 2018 and 2027, our team's proposed military budgets would cost $5.22 trillion. That is nearly $1.1 trillion less than current plans[5] for the Pentagon (function 050, in budgetary terms).[6] Over 70 percent of those saving comes in the second five-year period.

Our approach reflects a grand strategy[7] of restraint,[8] which differs[9] from the current U.S. approach to achieving security on four key claims. First, U.S. geography, wealth, and technological prowess go far[10] to secure the United States from attack, especially considering our historically weak enemies. Second, we should generally avoid wars meant to stabilize fractured states or to liberalize oppressive ones because they tend to backfire at tragic cost. Third, while allies can be useful in balancing the power of a threatening hegemon, like Nazi Germany or the Soviet Union, alliances should not be permanent. Today no such threat exists, and vast chunks of U.S. military spending goes to maintaining forces meant to defend states that can afford to defend themselves. Our protection can also encourage allies to avoid accommodating rivals and instead to heighten conflicts that can entangle U.S. forces. Fourth, while U.S. forces, especially the Navy, should protect trade routes from disruption during conflict, almost nothing threatens[11] peacetime trade. Overseas garrisons and naval patrols are not needed to protect it.

With fewer allies to protect, sea lanes to police and wars to fight, the U.S. military would need far less force structure, personnel, weapons and vehicles. It would require less operational

5 http://comptroller.defense.gov/Portals/45/Documents/defbudget/fy2016/FY16_Green_Book.pdf.

6 https://www.whitehouse.gov/tax-receipt/functions.

7 http://www.cornellpress.cornell.edu/book/?GCOI=80140100743820&fa=author&person_id=428.

8 https://www.dartmouth.edu/~dpress/docs/Press_Come_Home_America_IS.pdf.

9 http://object.cato.org/sites/cato.org/files/articles/isec_c_00140.pdf#page=3.

10 http://object.cato.org/sites/cato.org/files/articles/friedman-restraining_order.pdf.

11 http://www.dartmouth.edu/~dpress/docs/Press_Effects_of_Wars_SS.pdf.

funding, administrative support[12] and real estate. Our cuts follow that logic, but they are not indiscriminate. They reflect a preference[13] to take advantage of our nation's geopolitical fortune by staying aloof from conflicts. When U.S. forces go to war, they should come from home bases by air or sea and avoid lingering in occupation. We have the luxury to commence wars on our schedule while those we defend man the front line.

Our team could have saved more by immediately making all our cuts. We implemented them gradually to ease adjustment here and abroad. Our approach could achieve even bigger savings by cutting[14] spending categories that were not part of this exercise: intelligence, Department of Energy nuclear weapons budget and especially, the Pentagon's Overseas Contingency Operations Budget.[15]

Because the U.S. military is already too big for its base structure, we selected the Base Realignment and Closure option. Our smaller force structure allows even larger cuts to domestic base costs. We also eliminated most overseas bases over the ten-year period to reflect reduced alliance commitments.

We cut the ground forces—Army, Marine Corps, and Special Operations Forces—by about one third in terms of force structure and spending. That cut reflects avoidance of protracted and mostly unilateral nation-building missions and the dearth of threatening ground forces. Special Operations Command shrinks in our plan because we would reduce U.S. train-and-equip programs, which have poor record, and because with fewer wars, special operators would conduct fewer raids.

We made cuts of similar magnitude to the Air Force. Thanks to revolutionary[16] gains in strike accuracy,[17] far fewer aircraft and sorties are now required for the same missions—and we want fewer missions. Moreover, carrier-based air forces can now target most of the earth and accomplish much of what land-based fighters would. Because of restraint's emphasis on long-range strike, we cut Air Force lift and refueling capability less. We cut bombers substantially, but retained the future bomber program.

We cancelled each variant of the F-35 Joint Strike Fighter. Its excessive complexity and costs are not worth[18] its advantages in stealth and sensors. Long-range strike from other aircraft and missiles already provide tremendous capability against sophisticated adversaries, and few U.S.

12 http://foreignpolicy.com/2013/07/27/have-you-heard-the-one-about-the-pentagons-budget/.

13 http://www.theatlantic.com/magazine/archive/2002/01/a-new-grand-strategy/376471/.

14 http://object.cato.org/sites/cato.org/files/pubs/pdf/PA667.pdf.

15 http://www.stimson.org/content/defense-divided-overcoming-challenges-overseas-contingency-operations-0.

16 https://books.google.com/books/about/The_Precision_Revolution.html?id=mB9W3H90KDUC&source=kp_cover.

17 http://csbaonline.org/research/publications/the-evolution-of-precision-strike.

18 http://www.taxpayer.net/images/uploads/Alternatives%20to%20the%20F35(1).pdf.

adversaries are that. Instead, we bought more F/A-18 Advanced Super Hornets, retained the A-10 Warthogs, and added new F-16E/Fs.

Because the United States is oceans away from its wars, we cut the Navy less than the other services—roughly 25 percent. By leaving it with a greater share of the Pentagon's budget, we hope to heighten inter-service competition,[19] which aids civilian decision-making and increases innovation.[20] Under restraint, the Navy would operate as a surge[21] force that deploys to attack shorelines and to open sea lanes when necessary rather than conducting constant "presence" patrols. We retired the four oldest aircraft carriers over the ten-year period and cut twelve amphibious ships from the fleet. We cut destroyers, cruisers and other ships to reflect the reduction in carrier strike groups. The attack submarine fleet was cut somewhat less because of its evasiveness and usefulness for a variety of strike missions. We also ended the underperforming Littoral Combat Ship program and bought[22] a cheaper frigate.

We shifted from a triad of nuclear weapons delivery vehicles to a monad[23] consisting of ballistic missile submarines. No adversary can reliably track U.S. ballistic missile submarines, let alone do so well enough to attempt a preemptive strike against all of them. The trident missiles on the submarines are accurate enough to preemptively destroy enemy nuclear forces, especially as aided by conventional U.S. missiles. We also cut national missile defense spending heavily due to its doubtful effectiveness.

We kept a force that can generate overwhelming conventional force against any adversary, though not as quickly as today. Hence, we cut the guard and reserves relatively less than the active force. We also strove to keep the military technologically adept by protecting research and development funds and continuing programs that replace or update older weapons systems, albeit in lower numbers.

The current U.S. approach to its "defense" is essentially offensive. It undermines U.S. security by pretending the world's troubles can only be solved by U.S. military action. A truly defensive defense strategy could achieve greater security at far lower cost.

19 http://archive.wilsonquarterly.com/in-essence/let-em-fight.

20 http://edocs.nps.edu/AR/topic/theses/1996/Feb/96Feb_Cote_PhD.pdf.

21 http://www.usni.org/magazines/proceedings/2011-02/key-surge-navy.

22 http://www.realcleardefense.com/articles/2014/03/06/bring_on_the_frigate_lcs_is_outgunned_outclassed_107124.html.

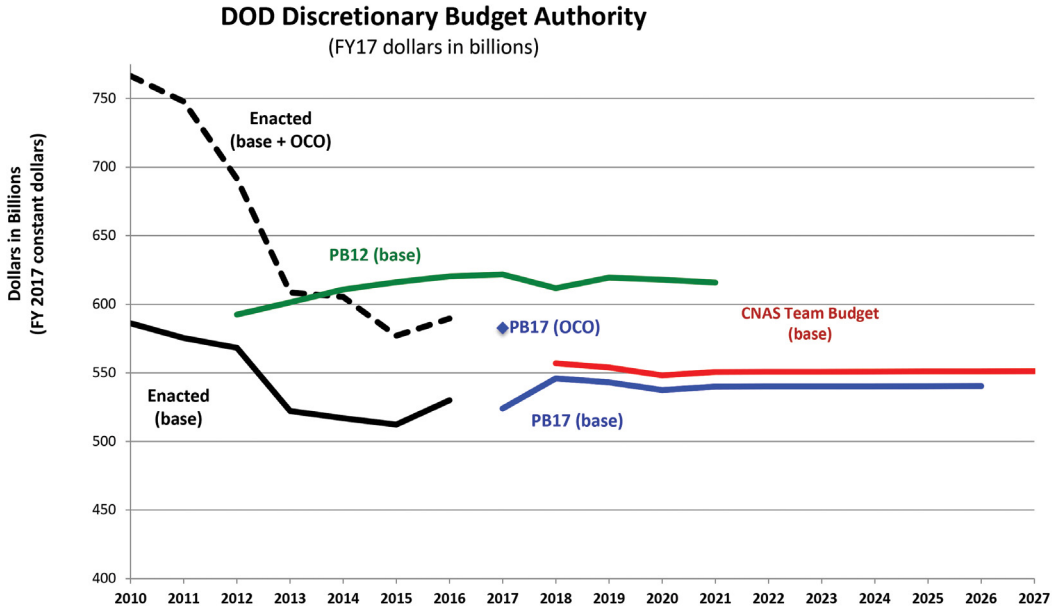
23 http://www.cato.org/publications/white-paper/end-overkill-reassessing-us-nuclear-weapons-policy.

A Balanced Next-Generation Force

Jerry Hendrix, Paul Scharre, and Elbridge Colby
Center for a New American Security

The Center for a New American Security team, Jerry Hendrix, Paul Scharre, and Elbridge Colby (CNAS does not take institutional positions), focused on maintaining readiness for today's threats while modernizing the force for future challenges. We assumed a modest 2 percent increase in defense spending above PB17 levels—a realistic level given political dynamics. By investing in a diverse high-low mix of forces for the range of DoD missions, rather than attempting to field a one-size-fits-all "utility infielder" force, we modernized the force while maintaining capacity. We grew the size of the naval fleet; increased tactical aircraft and stealthy bombers; preserved Army active duty end-strength while modernizing Army capabilities; modernized all three legs of the nuclear triad; increased R&D investments; and preserved special operations forces for counter-terrorism. We were able to accomplish this by making hard choices in efficiencies and cuts to legacy forces with declining utility.

FIGURE 1: BUDGET TOP-LINE IN PERSPECTIVE



Navy: We grew the Navy fleet 27 percent from today's 272 ships to 345 in ten years by pursuing a balance between highly sophisticated destroyers and low-end high-speed platforms outfitted with missiles, lasers, and railguns. We aggressively expanded the Navy's undersea strike capacity, increasing submarines from 58 to 74, and adding 680 cruise missile tubes. We funded these investments by terminating the *Ford*- and *America*-class carrier production lines in light of their costs and vulnerability to anti-access/area denial threats. This does not mean that we eliminated aircraft carriers from the force, but rather set up a process of steadily riding the carrier inventory downward over the next 50 years as existing carriers retire. We also curtailed the current amphibious fleet (LPD/LSD) in light the contested environment in the littorals and their high cost and vulnerability in A2/AD environments. We preserved Marine expeditionary and crisis response missions by shifting to lower-cost, commercial-derivative, expeditionary sea bases, resulting in a larger overall expeditionary lift capacity.

Air Force: We invested in a high-low mix of aircraft, focusing stealthy aircraft on the most challenging missions while investing heavily in next-generation technologies to preserve U.S. airpower dominance. We grew the total number of Air Force tactical fighter and attack aircraft by 180 aircraft and increased the number of stealthy bombers by 44 percent by increasing new B-21 bombers. We invested in new technologies and concepts of operation: advanced air-to-air and air-to-ground missiles; collaborative munitions; low-cost swarming platforms; and directed energy weapons. We preserved airlift, tankers, and non-stealthy unmanned intelligence, surveillance, and reconnaissance aircraft. We funded these investments by reducing quantities of non-stealthy bombers, leveraging a high-low mix of assets, and investing in a "manned-unmanned" mix of stealthy combat aircraft. We modestly trimmed fifth-generation

fighters, reducing F-35B and F-35C buys consistent with reductions in carriers and reducing F-35A quantities by 60 aircraft.

Army and Marine Corps: On land, we invested in ready, modern, and forward-stationed ground forces oriented primarily to deter Russian aggression in Europe. We preserved overall active duty Army end-strength at approximately 450,000, while shifting force mix from light infantry to armor, precision fires, missile defense, and electronic warfare. We increased active duty armored BCTs from 9 to 12 and acquired a new infantry fighting vehicle to replace the aging Bradley. We invested in new technologies such as active protection systems, unattended ground sensors, robotic air and ground vehicles, and human performance enhancement. Cuts to ground forces came from an 11 percent reduction in the Army reserves and a 5 percent decrease in the Marine Corps.

Readiness and Presence: A ready and present combat-credible force is essential to deterrence. Given the readiness shortfalls inflicted on the force by sequestration, we increased flying hours and depot maintenance above PB17 levels across the FYDP in order to reset the force. We also heavily invested in overseas posture. We placed two additional carriers and additional attack submarines and destroyers in the Pacific, and shifted two armored BCTs, a Stryker BCT, and a combat aviation brigade to Europe. We also invested in airfield dispersal, rapid runway repair, and at-sea rearming of vertical launch system (VLS) tubes to improve the joint force's ability to sustain combat power forward in contested areas. We invested $2 billion in improving partner bases for U.S. access and logistics. We improved DOD's ability to build partner capacity, creating two Advise and Assist Brigades, and investing in a light attack aircraft for training partners in low-end air capabilities.

Management: Across the Department, we sought efficiencies and streamlined processes. Through headquarters de-layering, leveraging automation to replace jobs, and seeking process efficiencies, we reduced the overall size of DOD's civilian workforce by 5 percent and the number of contractors by 8,000, saving over $55 billion across 10 years. We trimmed an additional $27 billion over 10 years by initiating Base Realignment and Closure, eliminating commissary subsidies, and raising TRICARE fees. These savings were reinvested in warfighting capabilities to sustain a ready, modern, and forward-present force.

Strategic Choices for Future Competitions

Mark Gunzinger, Jacob Cohn, Ryan Boone, and Timothy A. Walton
Center for Strategic and Budgetary Assessments

The United States should field a military that is second to none: one capable of defending the homeland, meeting oversea security commitments, and deterring revisionist powers. Six years of budget cuts have forced DoD to make harmful tradeoffs between its military end strength, current readiness, and modernization programs, leaving it insufficient to the task. America's Army is on the path to field its smallest force since before World War II (WWII), whereas the Navy's fleet is already at pre-WWII levels. The Air Force operates the smallest and oldest force in its history, and roughly 50 percent of the Marine Corps' non-deployed units maintain unacceptable readiness levels.

Given the emergence of powers that threaten peace and stability in the Pacific, Europe, and the Middle East, DoD cannot continue making these tradeoffs. Hostile state and non-state actors are taking advantage of modern technologies such as precision guidance, information technology, robotics, autonomy, and cyber capabilities to erode the U.S. military's ability to project power. Precision-guided conventional ballistic and cruise missiles can now range U.S. bases across Europe and the Western Pacific. At sea, new anti-ship weapons may force the Navy's ships to operate at distances exceeding the range of their weapons and fighters. Networked air and missile defenses coupled with modern electronic warfare systems are decreasing our military's airpower advantage and degrading its precision strike ability.

Restoring the U.S. military's advantages will require defense budgets that are guided by strategic choices, not arbitrary spending limits. CSBA recommends an increase of $572 billion over the next decade above the PB 2017 budget request. However, increased funding alone will not be enough; DoD must also change *how* it operates—its operational concepts—to prevail in emerging military competitions.

An initial step toward this objective is to view warfare as a series of ongoing competitions, such as the offense-defense "salvo competition" or the stealth-counterstealth "hider-finder" competition.[24] Since the end of the Cold War, DoD has largely pursued reactive, incremental improvements to current capabilities, leading to more expensive weapon systems that offer decreasing margins of advantage. Alternatively, the military could seek more enduring advantages by jumping to the next phase of military competitions, as illustrated below.

FIGURE 2: ILLUSTRATIVE SHIFTS IN OPERATIONAL COMPETITIONS

	Shift From	Shift Toward	Illustrative Implications
Deterrence	Preparing for "decisive" defeats in short-duration, conventional major theater wars	Countering gray zone aggression; preparing for denial and punishment ops and protracted conflicts	Survivable forward presence backed by rapid response global strike forces
Air-to-Air Warfare	Short-range sensors and weapons; maneuvering engagements	Networked sensors; BVR missile engagements	Stealthy, long-range, networked manned and unmanned aircraft with larger payloads
Precision Strike	Overwhelming strike advantage (precision replaces need for mass)	Strike parity; salvo competitions (precision and mass needed)	Weighted toward short-to-medium-range (70–400 nm) standoff strikes from stealth aircraft, supported by ground and naval fires
Air and Missile Defense	Active, kinetic, layered defenses prioritizing long-range intercepts; bias toward BMD	Shoot the archers; higher capacity, medium-range kinetic & non-kinetic salvo defenses; base resiliency	Distributed ops; lower-cost SAMs; DE including EW; gun-launched guided projectiles; dispersal; CCD; hardening
Naval Surface Warfare	"Full scope" power projection; all conflict phases; fleet defense	Sea/air denial operations; episodic power projection; more offensive capacity/distributed lethality	Multi-mission weapons; medium-range interceptors and non-kinetic defenses free VLS capacity for offensive weapons
Undersea Warfare	Focus on maritime domain operations; primarily utilizing manned submarines; passive acoustic systems	Cross-domain undersea operations; networked, low-frequency acoustic array and non-acoustic systems; use of manned/unmanned systems	Unmanned underwater vehicles and mission modules; fixed/expeditionary infrastructure
Carrier Aviation	Persistent coordinated carrier operations in range to strike inland targets	Multiple integrated CVNs support sustained ISR & strike ops from greater standoff distances	Refuellable, broadband/all-aspect LO carrier UCAS with significant payloads
EM Spectrum Warfare	High-power RF; large-bandwidth C2; space-based ISR and communications	Passive to low-power EMS operations including communications; improved signature reduction	Distributed, networked EMS operations; signature management; multi-functional capabilities
Land Warfare	Combined arms maneuver warfare; counterinsurgency ops; assumed local air superiority	Cross-domain operations in A2/AD areas; unconventional warfare; operations to counter gray zone aggression	Long-range precision fires; networked fires; air and missile defense; coastal sea denial operations; networked EW
Amphibious Warfare	Large-scale assaults; establish lodgments for joint forces	Distributed, small-scale littoral raids with limited objectives	Numerous ship-to-shore connectors; adaptable forces
Logistics	Lean "just in time" delivery; specialized military requirements; hub-and-spoke distribution system	Robust commercial-military hybrid requirements and delivery; redundant distributed nodes	Expeditionary logistics support; resilient instead of efficient logistics architecture; graceful attrition; autonomous & predictive logistics
Space	Large, dedicated satellites for PNT, communications, and ISR	Fractionated/distributed constellations; hosted payloads; non-space alternatives; contested environment	Rapid replenishment/survivable assets; commercial comms; airborne layers
Nuclear Deterrence	Decreasing investment; wide area, strategic mission; counter-proliferation	Tailored, usable effects; counter-employment; survivable launch	Electronics hardening; survivable penetrators; more escalation options

24 The term "salvo competition" refers to the dynamic between militaries that both have precision-guided weapons and capabilities to counter precision strikes. Both combatants seek advantages by improving their capabilities to attack with precision and defend against its opponent's strikes. In parallel, there is another competition in which competitors seek to identify, track, and target adversary assets while obscuring information about their own. For an explanation of the "hider-finder" competition, see Michael G. Vickers and Robert C. Martinage, *The Revolution in War* (Washington, DC: Center for Strategic and Budgetary Assessments, December 2004), pp. 109–114.

CSBA's rebalancing strategy had three objectives: adopt concepts and field capabilities to leap ahead to the next phase of these and other operational competitions; develop capabilities that would impose costs on enemies;[25] and posture military forces in Europe, the Pacific, and the Middle East to strengthen deterrence and improve crisis response.

The Army. The Army must prepare for multi-domain operations in contested areas. The Army should invest in longer-range precision fires to support forces operating under A2/AD umbrellas, degrade enemy A2/AD capabilities, and interdict enemy sea lines of communication. CSBA also recommends higher capacity and shorter-range air and missile defenses, including directed energy systems, to protect fixed and mobile forces against UAVs and guided weapons at more favorable cost exchanges. New, multi-mission electronic warfare systems could help the Army dominate the electromagnetic spectrum. Finally, the Army should posture additional land forces in Europe and the Pacific to deny aggressors the ability to achieve a *fait accompli* given the time needed to transport logistic-intensive forces and materiel into contested battlespaces. Implementing CSBA's changes will increase the active-duty Army beyond 505,000 personnel, a 55,000 soldier increase from planned levels.

The Air Force. The Air Force's highest priority should be developing a globally responsive family of manned and unmanned, long-range, penetrating surveillance and strike aircraft backed by resilient C4ISR networks and deep stocks of short-range standoff (70–400 nm) precision-guided munitions (PGMs). To create this family of systems, DoD should accelerate B-21 procurement and field a bomber force that is sized for multiple overlapping campaigns. Shifting toward long-range, unmanned ISR and strike systems would improve the Air Force's ability to operate from bases that outrange most land-based missile threats and reduce the need for air refueling tanker support. The Air Force could also mitigate its fighter shortfall by sustaining funding for the F-35A, restarting production of an improved F-22, and pursuing a low-cost fighter to support current operations. This high-low mix would increase the Air Force's combat force to meet current and future challenges while reducing the 27-year average age of its fighters.

The Navy. CSBA recommends the Navy adopt operational concepts and allocate resources for three priorities. First, shift strike capacity to manned and unmanned undersea systems that can operate effectively under enemy anti-access envelopes. Second, sustain presence in key areas by building small surface combatants and unmanned vehicles. Finally, maintain sea control and power projection primacy by procuring longer-range unmanned penetrating ISR and strike aircraft for use on carriers, shifting towards higher capacity air and missile defenses on surface combatants, and improving logistics resiliency. CSBA's investments would increase the size of the Navy's battle fleet from 272 ships to 384 within a decade.

25 For instance, deploying ground-based intermediate range weapons (cruise, ballistic, or boost-glide) could target key nodes in an adversary's A2/AD umbrella-allowing other aspects of the Joint Force to exploit gaps, or it could force an adversary to confront the complex and expensive challenge of fixed-base defense. Alternatively, extending the range of the carrier air wing could force an adversary to invest in even longer-range and costlier weapons systems to continue challenging a carrier's ability to project power.

The Marine Corps. The Marine Corps should be America's "9-1-1" response force. CSBA grew the Service's end strength beyond 186,800 and increased readiness funding to improve its short-notice responsiveness. It also continued F-35B production to replace the obsolete AV-8B. The cost of these investments could be partially offset by divesting capabilities that are primarily designed for amphibious assault operations into contested environments.

In sum, CSBA's approach offers a roadmap to secure enduring advantage for the coming decades by leaping ahead to the next phase of military competitions. It carries some budgetary risk, however. BRAC, compensation reform, the divestment of select legacy systems, rebalancing between Active and Guard portfolios, and other reforms are necessary to increase DoD's agility and competitiveness. Failure to enact reforms would result in either a larger topline or a reduction in our military's future advantage. Either would harm the national interest.

Rebalancing for a Durable Political Consensus

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The rebalancing approach presented here begins with a set of fundamental guiding principles aimed at building a durable political consensus for defense in the next administration. The first principle is that the defense budget should be both strategy-driven and resource-constrained. While defense strategy should be used to determine the forces and capabilities needed, those needs must be assessed against the resources available and the tradeoffs that must be made elsewhere in the federal budget. A strategy that is set without regard for realistic fiscal constraints makes building a political consensus more difficult and leads to greater budgetary uncertainty. A second guiding principle is that the budget should provide a true and accurate representation of military costs to enable informed policy decisions. In recent years, some $30 billion in "enduring costs" have migrated from the base budget to the Overseas Contingency Operations (OCO) budget where they are not included in long-term spending and deficit projections. The rebalancing approach proposed here moves these funds back into the base budget where they belong to prevent OCO funding from being used to obscure the true costs of the military or as a political weapon to extract concessions from the other party. A third guiding principle is that the efficiency savings, while important and always worth pursuing, should not be assumed in the budget until they are realized.

The strategy proposed here is based on a prioritization of roles and missions for the U.S. military and key near-term and long-term threats. The roles and missions for the military, in priority order, are: 1) to protect the homeland; 2) to protect U.S. vital interests around the world, including U.S. citizens overseas and treaty commitments to allies; 3) to provide a stabilizing balance in key regions when needed; and 4) to conduct humanitarian assistance and disaster relief operations. The near-term threats that could impede the military's ability to carry out these roles and missions include: creeping aggression and hybrid warfare by Russia in eastern Europe; grey zone aggression and territorial claims by China in the South China

Sea; provocations by North Korea and Iran; the spread of global terrorist organizations and ungoverned space in the Middle East; and political instability and unrest among allies and partners. The main long-term threats are the weakening of U.S. power projection capabilities and the growing power projection capabilities of adversaries. This is due in part to the proliferation of precision-guided missiles and munitions, electronic warfare capabilities, cyber threats, and counter-space capabilities that are leveling the playing field in many areas in which the United States has traditionally enjoyed a significant advantage. Other long-term threats the military must be prepared for include: challenges to the rules-based global system and U.S. network of alliances; the proliferation of nuclear weapons and loss of the nuclear "taboo" if nuclear weapons are used again; and the potential collapse of major states and the spread of disorder.

The strategy proposed to counter these threats is bifurcated: one part focuses on major military competitions and the high-end spectrum of conflict, while the other focuses on selective engagement to counter lesser regional threats. For major military competitions, the objective is to provide a credible deterrent against potential adversaries such as Russia, China, North Korea, and Iran by maintaining and extending operational and technological advantages in key areas, particularly space, cyber, air, and undersea. The objective of the selective engagement component of the strategy is to be prepared to put our thumb on the scales and tip the balance of power in our favor in regional conflicts where our strategic interests are at stake without necessarily putting boots on the ground and committing the U.S. to large-scale ground interventions.

To execute this strategy, the U.S. military needs a high-low mix of forces and capabilities. The figure below lists the highest priority capabilities needed to execute this strategy broken down by those intended for highly contested operating environments versus those intended for a less contested environment. Capabilities receiving new or increased investment are shown in bold type, while capabilities not included in this chart are a lower priority by definition and could therefore be reduced or deemphasized. A common thread among the high-end capabilities is an increased emphasis on stealthy/submersible, long-range, unmanned, and distributed forces, and the budget supporting this strategy is rebalanced accordingly. The capabilities needed for a less contested operating environment emphasize mobility, logistics, and lower cost alternatives to support a force that can be mobilized and scaled quickly when needed.

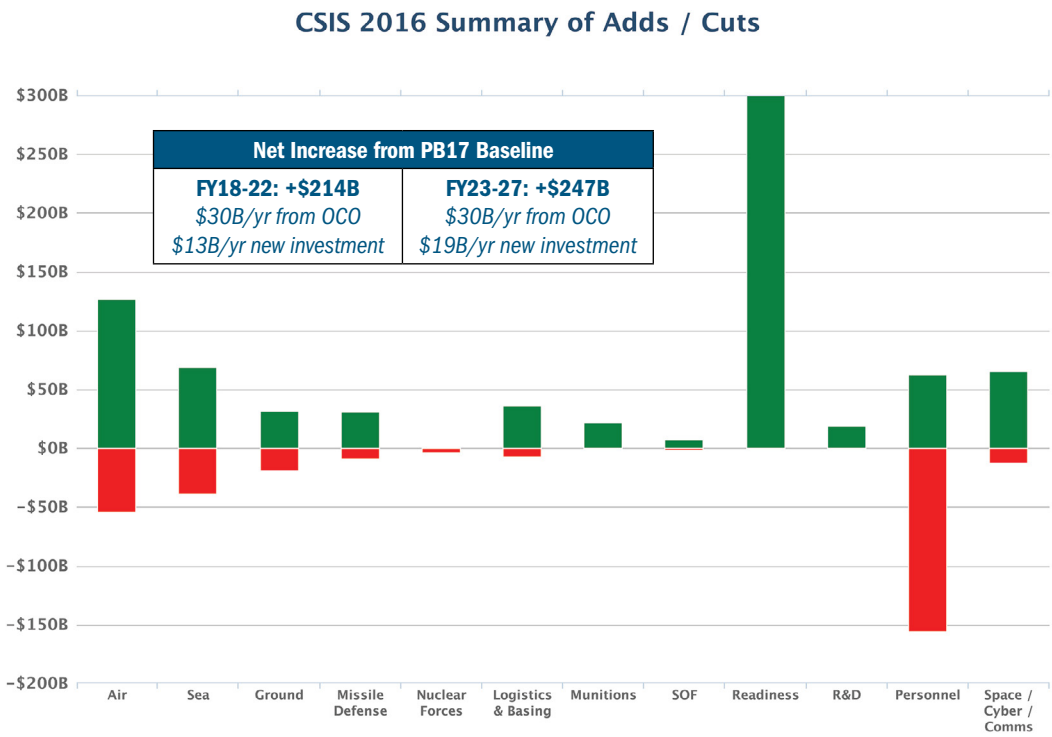
FIGURE 3: CAPABILITY PRIORITIES

	Air	Sea	Ground	Space	Cyber/Intel
Highly Contested Environment	· Stealthy, long-range strike and ISR · Stealthy tanking · Stealthy unmanned strike and ISR · Airborne nuclear deterrent · Advanced munitions	· SSNs/SSGNs · UUVs · Sub-based nuclear deterrent · Sea-based missile defense · Advanced munitions & sensors	· Long-range fires · Land-based air & missile defense · Land-based national missile defense · SOF · Armor in A/C · Counter WMD	· Strategic protected SATCOM and missile warning · Hosted payloads for tactical protected SATCOM, missile warning, and PNT resilience	· Offensive cyber teams · Defensive cyber teams · National infrastructure protection · Intel fusion, integrated C2
Less Contested Environment	· Non-stealthy strike & ISR · Non-stealthy unmanned strike and ISR · Airlift and tanking capacity · Airborne Warning/C2 · Rotary-wing attack/lift	· Sealift · Amphibs · Small surface combatants	· Pre-positioned equipment sets · Infantry in R/C	· Commercial Narrowband SATCOM · Commercial Wideband SATCOM	

While the major military competition and selective engagement components of the strategy are somewhat distinct, the capabilities that support them overlap in many ways. For example, both strategies prioritize working with allies and partners to develop complementary capabilities and capacity. For the United States, this means increased investments in areas where our allies and partners need help the most, such as intelligence, surveillance, and reconnaissance (ISR), command and control (C2), logistics, and munitions.

Overall, this strategy and rebalancing approach would require an increase in funding above the level proposed in the president's FY 2017 budget request of $461 billion over the next ten years. However, as shown in the figure below, the majority of this increase—some $300 billion—is a result of moving enduring costs from the OCO budget back into the base budget. The variable costs of ongoing contingencies in Afghanistan, Iraq, Syria, and other locations around the world would still be funded separately in OCO. The largest areas of new investments are in air, space, cyber, and sea, which is consistent with the strategy proposed and the key threats identified.

FIGURE 4: BUDGET REBALANCING SUMMARY



Three types of risk could interfere with the implementation of this rebalancing strategy: political, strategic, and programmatic. Political risks include continued budget pressures that limit the resources available, resistance in industry and Congress to the reductions proposed for some major acquisition programs, and resistance in Congress and state governments to the transfer of forces between the active and reserve components. Strategic risks include a "black swan" event, especially in cyber or space, or the rapid collapse of a major power and ensuing disorder. Programmatic risks include the ever-present challenge of cost overruns and schedule delays in acquisitions, new technologies that may not mature as anticipated, and growing O&M costs that could limit investments in new capabilities.

It is important to acknowledge that each of these risks are difficult to mitigate and could potentially derail the rebalancing strategy proposed here. While the strategic risks are largely beyond our control, political and programmatic risks are mainly of our own making. The strategy and rebalancing approach shown here could be used as a starting point for the next administration to forge a durable political consensus on the defense budget and better position the military for future challenges. Without such a consensus, however, peacetime defense strategy and long-term defense planning will be difficult if not impossible.

Exercise Results and Analysis of Choices

Overview[26]

There were significant variations among the strategies and rebalancing approaches adopted by each team—more than $2 trillion separated the most expensive recommendation from the least expensive. No team recommended returning to the "Gates Budget" funding levels requested in PB12, the last pre-BCA budget request, although the team from AEI came close. AEI recommended spending just over $6.75 trillion over ten years compared to the $6.88 trillion that an extrapolated PB12 would require. In contrast, the team from Cato recommended that spending fall to $4.7 trillion over ten years, almost $800 billion less than the BCA caps.[27]

FIGURE 5: RECOMMENDED 050 REQUEST

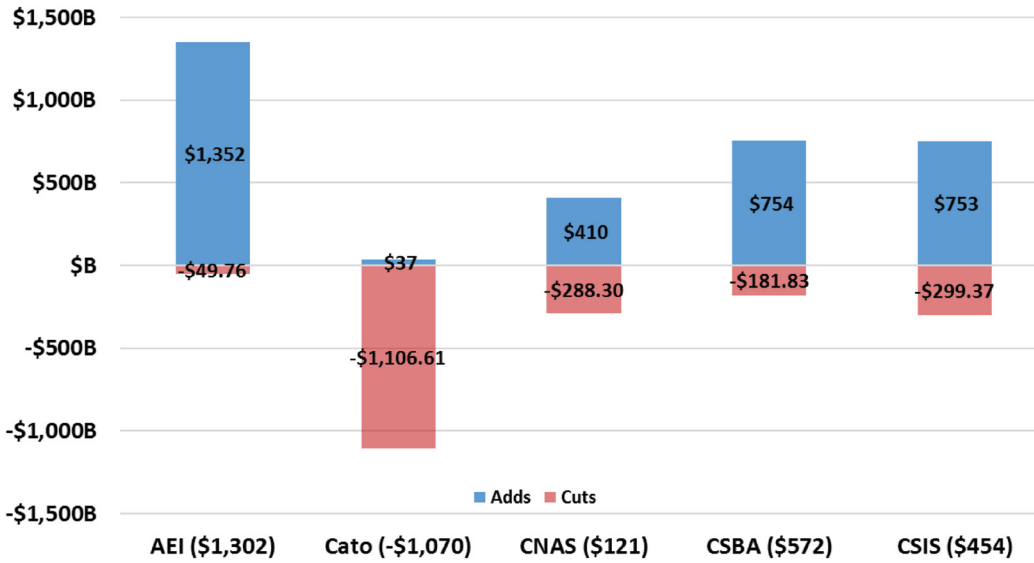
	050 Total (FY17$ in billions)	% of PB17	$ Difference from PB17	050 Spending as % of GDP
AEI	$6,752	119%	$1,089	3.08%
Cato	$4,702	83%	$(961)	2.14%
CNAS	$5,773	102%	$109	2.63%
CSBA	$6,174	109%	$511	2.82%
CSIS	$6,075	107%	$412	2.77%
PB17	$5,663	100%	–	2.58%
PB12	$6,883	122%	$1,219	3.14%
BCA Caps Modified by October 2015 BBA	$5,481	97%	$(182)	2.50%

26 Appendix A presents a summary of the overall adds and cuts by category for each team. Appendix B compares the baseline force structure of the U.S. military in 2027 to the alternate plans developed by each team. Individual team presentations and a video from the launch event on October 18, 2016 can be found at http://csbaonline.org/about/events/2016-developing-alternative-defense-strategies.

27 All of the dollar amounts in the preceding paragraph are in constant FY17 dollars.

Teams also differed significantly as to how much they rebalanced within DoD's program of record. The figure below shows the net recommended change to the 050 budget[28] as well as the overall magnitude of suggested adds and cuts in then-year dollars. It suggests that the teams from both AEI and Cato believed that defense spending should change substantially from current plans, albeit in opposite directions. AEI recommended more than $1.3 trillion in additional spending, but only identified roughly $50 billion in offsetting cuts. In contrast, Cato cut more than $1.1 trillion and only recommended additions totaling $37 billion. Teams from CNAS, CSBA, and CSIS all argued for net increases in 050 spending, but recommended greater cuts to the program of record.

FIGURE 6: OVERALL REBALANCING



Force Structure Implications

Despite the variation across the strategies, there were several common themes. Army rebalancing emphasized armored brigades, fires battalions, and air and missile defense batteries. Many teams prioritized longer-range and stealthier platforms for the Air Force and smaller surface combatants and undersea strike within the Navy. Four of the five teams also fully recapitalized the nuclear triad.

The following figures highlight key force structure changes across the different services and domains that reflect the broad prioritizations of each team for the U.S. military of 2027.

28 The 050 budget refers to the National Defense budget function in the annual budget request. For a formal definition of the 050 budget function see, U.S. House of Representatives Committee on the Budget, "Budget Functions," available at http://budget.house.gov/budgetprocess/budgetfunctions.htm#function050.

FIGURE 7: ACTIVE DUTY ARMY, 2027

	Baseline	AEI	CATO INSTITUTE	Center for a New American Security	CSBA	CSIS
ABCTs	9	+3	-3	+3	+1	+2
SBCTs	7	0	-3	0	-1	+2
IBCTs	14	+1	-5	-4	-2	-5
SR Fires Battalions	11	+5	0	+6	+18	+4
LR Fires Battalions	0	+1	0	0	+1	+6
SR & MR AMD Batteries	71	+73	0	+35	+108	+35
LR AMD Batteries	8	+1	-7	+4	+2	+4
Army End Strength	450K	+72K	-100K	-1K	+55K	+15K

Most of the teams recommended three significant changes to the active-duty Army. The first was an increase in the number of armored brigades at the expense of infantry and Stryker brigades. Four teams added armored brigades compared to two cutting Stryker brigades and four cutting infantry brigades. The second was increased investment in ground-based precision fires. No team cut ground-based fires and four invested in additional ground-based fires battalions. At the low end, CSIS increased the Army's short-range ground-based fires force structure by 36 percent, and at the high end, CSBA expanded that force structure by 164 percent. Three teams also recommended investing in intermediate range ballistic missile battalions with weapons that would be covered by the INF Treaty.[29] Finally, four teams greatly expanded the Army's inventory of short- and medium-range air and missile defense batteries. In contrast, the team from Cato recommended broad cuts to the Army with Stryker brigades and long-range air and missile defense batteries receiving the largest proportional reductions. There were no offsetting investments in alternative elements of ground force structure, reinforcing Cato's vision of a smaller and more defensive Army.

29 The Intermediate-Range Nuclear Forces Treaty (INF) banned the United States and the Soviet Union from developing and deploying ground-launched cruise or ballistic missiles with ranges between 500 and 5,500 kilometers. The United States has argued that Russia has been violating the INF Treaty since 2014, and in October 2016, the United States called for a meeting of the Special Verification Commission to confront Russia's non-compliance with the treaty. Michael Gordon, "Russia is Moving Ahead with Missile Program That Violates Treaty, U.S. Officials Say," *The New York Times*, October 19, 2016.

FIGURE 8: AVIATION, 2027

	Baseline	AEI	CATO INSTITUTE	Center for a New American Security	CSBA	CSIS
Stealthy Bombers	34	+15	-20	+15	+15	+5
Non-Stealthy Bombers	138	-60	-73	-60	0	-20
Stealthy Fighter/Attack	1503	+960	-1160	-180	+80	-240
Non-Stealthy Fighter/Attack	1882	-1280	-170	+180	+380	+160
Stealthy Unmanned ISR/Strike	0	+180	0	+110	+190	+150
Non-Stealthy Unmanned ISR/Strike	433	+485	-90	0	-6	-6

The previous figure compares investments in overall military aviation and includes aircraft from the Air Force, Navy, and Marine Corps. Teams from AEI, CNAS, CSBA, and CSIS all chose to increase investments in long-range stealthy strike aircraft and stealthy unmanned ISR/strike platforms. Cato reduced inventories of all strike aircraft, although it comparatively protected non-stealthy fighters.

FIGURE 9: SURFACE NAVY, 2027

	Baseline	AEI	CATO INSTITUTE	Center for a New American Security	CSBA	CSIS
Aircraft Carriers	11	0	-4	-1	0	-1
Amphibious Ships	36	+8	-12	-11	0	0
Combat Logistics Force	30	+20	-10	+2	+16	0
Large Surface Combatants	99	+10	-28	-13	0	-6
Small Surface Combatants	37	+28	-20	+22	+39	0

Reflecting an increasingly lethal environment in which large surface ships will increasingly have to operate, CNAS, CSBA, and CSIS shifted focus from the Navy's traditional reliance on aircraft carriers and large surface combatants to smaller surface combatants and undersea forces, albeit to varying degrees. Cato, CNAS, and CSIS decreased funding of aircraft carriers and large surface combatants with CNAS and CSIS reinvesting some of those resources into smaller surface combatants and undersea forces. CSBA also invested heavily in smaller surface combatants and undersea forces, but did not cut large surface combatants; indeed, CSBA accelerated construction of the *Ford*-class carrier to one every four years. AEI focused on expanding the Navy broadly, including significant investments in restarting the *Zumwalt* production line to develop a modern air defense cruiser and accelerating the Ford-class

build schedule. Additionally, AEI, CNAS, and CSBA recommended increased spending on logistics ships.

FIGURE 10: UNDERSEA WARFARE AND SUPPORT INFRASTRUCTURE, 2027

	Baseline	AEI	CATO INSTITUTE	Center for a New American Security	CSBA	CSIS
Attack Subs	44	+15	-9	+13	+8	+2
Cruise Missile Subs	1	-1	0	+3	0	+3
Long Endurance UUVs	0	+3	0	+1	+10	+5
Towed Payload Modules	0	0	0	0	+5	+2
Littoral Sensor Arrays	0	+10	0	0	+2	0
Submarine Tender	2	+2	0	0	+1	+2
SURTASS Ship and LFA Sonar Systems	5	0	0	+1	+1	0
Deep Sea Payload Pod	0	+5	0	0	+5	0
Towed Payload Modules	0	0	0	0	+5	+2
Extra-Large Displacement UUV	0	+1	0	+1	+1	+1

All five think tanks rebalanced towards undersea forces and infrastructure, although the team from Cato reflected this by cutting undersea forces less than other naval categories. The other teams invested broadly across the category and funded attack submarines and unmanned underwater vehicles (UUVs) consistently. There was less of a consensus over undersea infrastructure and undersea payloads, but the teams from AEI, CSBA, and CSIS invested heavily in those options.

FIGURE 11: STRATEGIC FORCES, 2027

	AEI	CATO INSTITUTE	Center for a New American Security	CSBA	CSIS
B61 Life Extension	Funded	Canceled	Funded	Funded	Funded
F-35 Nuclear Mods	Funded	Canceled	Delayed	Delayed	Canceled
ICBM Wings	0	-3	0	0	-1
Ohio-Class SSBNs	0	Delayed Replacement	0	0	0
LRSO Program	Increase Munitions Buy	Canceled	Accelerate Program	Increase Munitions Buy	Funded
Minuteman Replacement	Funded	Canceled	Funded	Funded	Funded
Trident II D5 Mods	Funded	Canceled	Funded	Funded	Funded
Cert Training for B-52s	Canceled	Canceled	Funded	Funded	Canceled
Cert Training for Fighters	Funded	Funded	Funded	Funded	Funded

The Department of Defense is in the middle of a decades-long recapitalization of the nuclear triad,[30] which four of the teams supported with minimal deviation from the current plan. CNAS and CSBA delayed the modifications necessary to make the F-35A a nuclear-capable platform, and Cato and CSIS canceled them outright. More striking, Cato cut both the land and air legs of the triad, arguing that nuclear deterrence could be maintained solely with the sea leg of the triad.

30 For more on the costs associated with recapitalizing the nuclear triad see Todd Harrison and Evan Braden Montgomery, *The Cost of U.S. Nuclear Forces: From BCA to Bow Wave and Beyond* (Washington, DC: Center for Strategic and Budgetary Assessments, August 2015).

Conclusion

Defense resourcing in the United States is largely a function of three considerations: America's global interests, the role of the military in upholding those interests, and the willingness of policymakers to accept military risk. For the last fifteen years, the United States has been overwhelmingly focused on defeating violent extremist organizations and protecting Americans from terrorist attack. Although counterterrorism remains an important mission for the military, the United States faces growing challenges in Europe and Asia that require investments distinct from those made over the past decade and a half. Russian aggression against sovereign states in eastern Europe has created challenges for NATO not seen since the end of the Cold War. China's military modernization and willingness to use coercion to further its ambitions threatens stability in the Western Pacific. In sum, the United States now confronts revisionist powers across Eurasia and is in the opening stages of renewed great power competition, unless core American interests are redefined.

A Strategic Choices Exercise forces participants to reevaluate their assessment of the strategic environment and what is required of the military. It shows a clear linkage between team's perspectives on America's role in the world, how they view risk, and defense resourcing. Since this exercise focused on strategy-driven military capabilities and posture rather than simply being a budget drill, teams were forced to reevaluate "the big questions" that guide American defense planning and resourcing.

Five think tanks presented five alternative defense strategies, each matching means, ways, and ends. The goal of the exercise was not to identify specific programs that must be protected or new technologies that need to be funded, but rather to present alternative visions for American defense policy and highlight capability and concept trends that could support future defense planning.

The strategies are, however, not without risk. The individual strategic and operational assessments each team conducted may miss a critical trend or be surprised by a "black swan" event. Technologies may not mature within projected timelines or at acceptable cost. Moreover, DoD's ability to implement any of these strategies is hamstrung by financial constraints. Many of the think tanks argued for military compensation reform, a new round of Base Realignment

and Closure (BRAC), and retiring aging systems, yet Congress has repeatedly denied those requests. DoD has not had budgetary stability since the PB12 budget submission; annual funding levels are consistently uncertain and often late due to delays in Congress passing a budget, making it difficult to conduct long-term strategic planning.

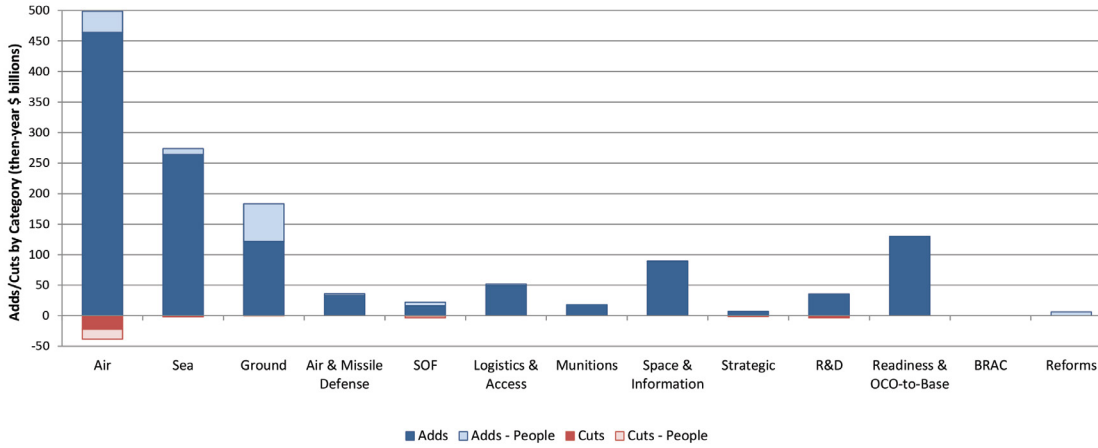
The next presidential administration and Congress can reverse budget, readiness, capability, and force structure trends that undermine our nation's military. Alternatively, they could accept a far more restrained view of the American interests and, by extension, how the United States uses military force. One final option, and the one upon which the United States is currently embarked, is to continue to underfund the military given what we ask of it and watch as the emerging gap between threats and U.S. capabilities steadily widens.

APPENDIX A: TEAM STRATEGIES BY THE NUMBERS

Note: Certain category totals include some rounding, leading to small deviations from total topline figures given in previous sections. Data provided to more finely illustrate the investment trends in each strategy, not give a precise accounting.

AEI Rebalancing Results

ADJUSTMENTS BY CATEGORY



ADJUSTMENTS BY CATEGORY (then-year $ billions)

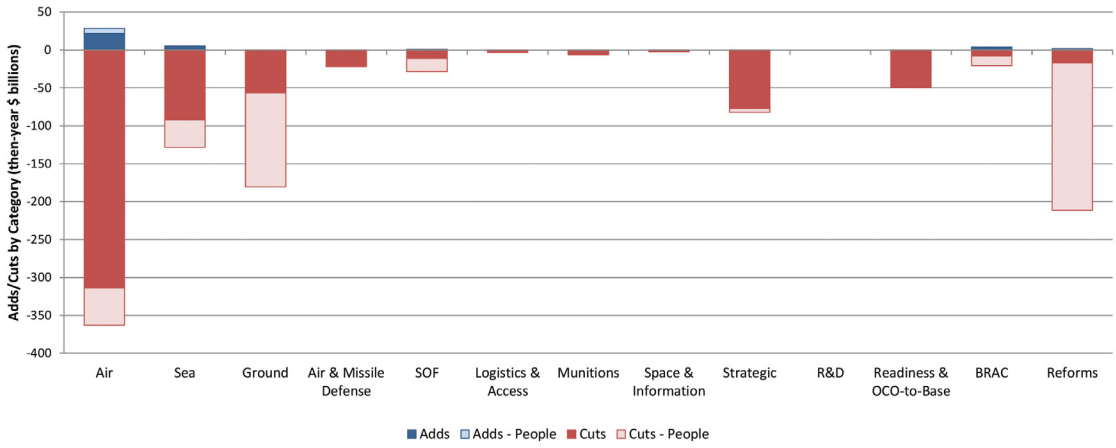
Category	Air	Sea	Ground	Air & Missile Defense	SOF	Logistics & Access	Munitions	Space & Information	Strategic	R&D	Readiness & OCO-to-Base	BRAC	Reforms
Adds	464.0	263.8	121.7	33.4	16.1	49.5	18.1	88.7	7.2	35.5	130.1		
Add - People	34.8	10.1	61.8	2.5	5.9	2.2		0.7					6.2
Cuts	-22.5	-1.9			-1.0				-1.3	-2.3			
Cuts - People	-15.8	-0.4	-0.6		-2.8				-0.3	-1.4			

NET PERSONNEL CHANGE

	USAF Active	USAF Guard/ Reserve	USA Active	USA Guard/ Reserve	USN Active	USN Reserve	USMC Active	USMC Reserve
Move 1	13,600		40,400	41,100	10,200		15,900	
Move 2	3,300	-11,300	28,000	46,600	5,400		17,900	
Final End Strength	333,900	163,400	528,400	617,700	338,500	58,000	215,800	38,500

Cato Rebalancing Results

ADJUSTMENTS BY CATEGORY



ADJUSTMENTS BY CATEGORY (then-year $ billions)

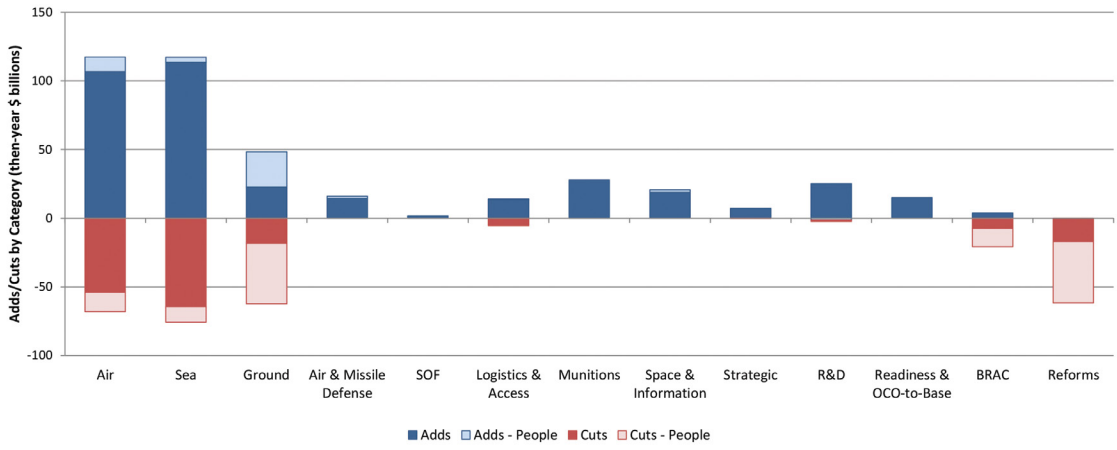
Category	Air	Sea	Ground	Air & Missile Defense	SOF	Logistics & Access	Munitions	Space & Information	Strategic	R&D	Readiness & OCO-to-Base	BRAC	Reforms
Adds	21.8	4.8										3.8	
Add - People	6.6	0.5			0.7								1.9
Cuts	-313.7	-92.4	-56.6	-20.4	-11.1	-3.3	-6.2	-2.4	-77.1		-50.0	-7.5	-17.1
Cuts - People	-49.3	-36.1	-123.7	-1.4	-17.4				-5.1			-13.2	-194.2

NET PERSONNEL CHANGE

	USAF Active	USAF Guard/ Reserve	USA Active	USA Guard/ Reserve	USN Active	USN Reserve	USMC Active	USMC Reserve
Move 1	-28,200	-9,400	-95,600	-121,000	-47,400		-25,300	-9,400
Move 2	-70,000	-15,000	-4,400	-16,700	-17,500	-10,400	-33,600	-1,000
Final End Strength	218,800	150,300	360,000	392,300	258,000	47,600	123,100	28,100

CNAS Rebalancing Results

ADJUSTMENTS BY CATEGORY



ADJUSTMENTS BY CATEGORY (then-year $ billions)

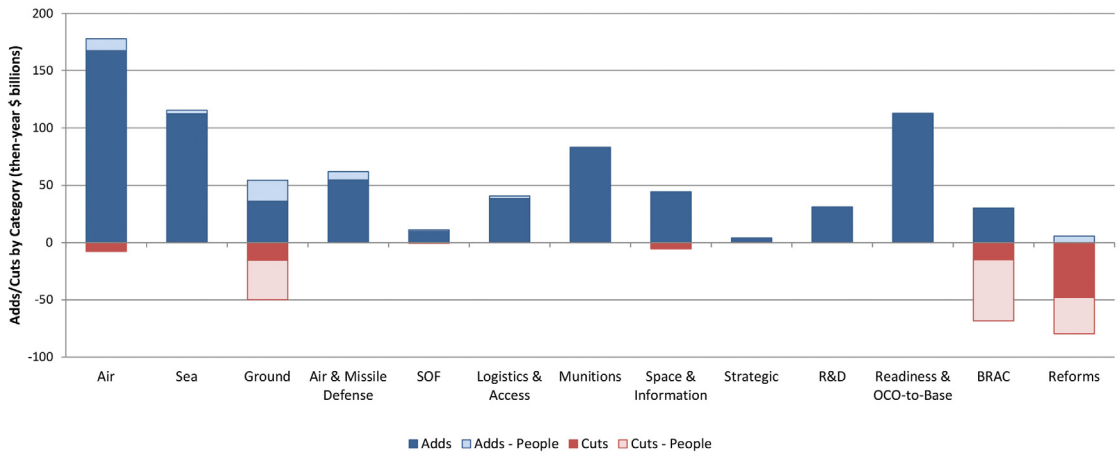
Category	Air	Sea	Ground	Air & Missile Defense	SOF	Logistics & Access	Munitions	Space & Information	Strategic	R&D	Readiness & OCO-to-Base	BRAC	Reforms
Adds	106.7	113.5	22.5	14.5	1.7	13.4	27.8	18.8	7.1	25.1	14.9	3.8	
Add - People	10.6	3.8	25.8	1.4		0.5		1.8		-1.4			
Cuts	-54.1	-64.4	-18.2			-5.5			-0.04	-1.1		-7.5	-17.1
Cuts - People	-14.1	-11.4	-44.2									-13.2	-44.7

NET PERSONNEL CHANGE

	USAF Active	USAF Guard/ Reserve	USA Active	USA Guard/ Reserve	USN Active	USN Reserve	USMC Active	USMC Reserve
Move 1	-3,200	-400	3,400	-48,300	-10,300	-2,000	-5,800	-3,700
Move 2	4,800		-4,400	-16,700	300		-900	
Final End Strength	318,600	174,300	459,000	465,000	312,900	56,000	175,300	34,800

CSBA Rebalancing Results

ADJUSTMENTS BY CATEGORY



ADJUSTMENTS BY CATEGORY (then-year $ billions)

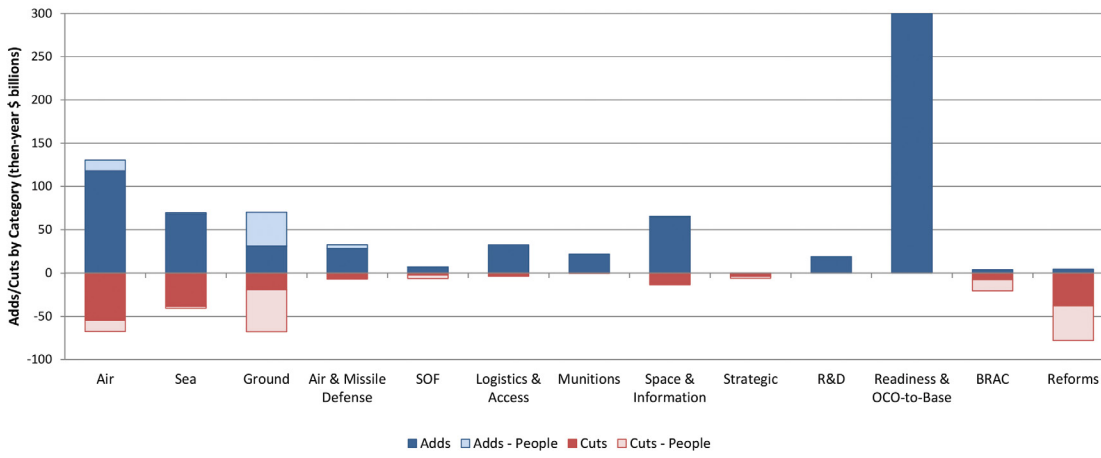
Category	Air	Sea	Ground	Air & Missile Defense	SOF	Logistics & Access	Munitions	Space & Information	Strategic	R&D	Readiness & OCO-to-Base	BRAC	Reforms
Adds	167.4	112.4	36.0	54.6	9.7	38.4	83.2	44.4	4.0	31.2	113.0	30.0	
Add - People	10.4	3.1	18.5	7.2	1.4	2.2							5.7
Cuts	-7.4		-15.6		-0.6			-5.4	-0.1			-15.0	-47.9
Cuts - People	-0.2		34.1									-53.3	-31.6

NET PERSONNEL CHANGE

	USAF Active	USAF Guard/ Reserve	USA Active	USA Guard/ Reserve	USN Active	USN Reserve	USMC Active	USMC Reserve
Move 1	11,300	3,000	5,400	-34,700	4,500		5,100	-8,800
Move 2	15,900	1,200	39,900	6,600	5,200			
Final End Strength	344,200	178,900	505,300	501,900	332,600	58,000	187,100	29,700

CSIS Rebalancing Results

ADJUSTMENTS BY CATEGORY



ADJUSTMENTS BY CATEGORY (then-year $ billions)

Category	Air	Sea	Ground	Air & Missile Defense	SOF	Logistics & Access	Munitions	Space & Information	Strategic	R&D	Readiness & OCO-to-Base	BRAC	Reforms
Adds	118.1	68.0	31.3	28.5	6.8	32.6	21.9	64.7		18.9	300.0	3.8	4.5
Add - People	12.3	1.4	38.9	4.2	0.3			0.8					
Cuts	-54.4	-38.4	-19.5	-7.0	-2.3	-3.8	-0.3	-13.4	-3.8			-7.5	-37.9
Cuts - People	-13.4	-2.3	-48.6		-3.9				2.2			-13.2	-40.2

NET PERSONNEL CHANGE

	USAF Active	USAF Guard/ Reserve	USA Active	USA Guard/ Reserve	USN Active	USN Reserve	USMC Active	USMC Reserve
Move 1	-7,700	5,400	2,500	-33,100	-900	-10,000	-5,800	-3,700
Move 2	500	9,600	12,800		-1,400		-600	
Final End Strength	309,800	189,700	475,300	496,900	320,600	48,000	175,600	34,800

APPENDIX B: COMPARISON OF U.S. MILITARY FORCE STRUCTURE IN 2027

Option Category	Force Structure Category	Baseline	AEI	Cato	CNAS	CSBA	CSIS
Air	Aerial Refueling	567	707	432	572	567	587
Air	Airlift	614	728	462	614	614	614
Air	Bombers (non-stealthy)	138	78	65	78	138	118
Air	Bombers (stealthy)	34	49	14	49	49	39
Air	Fighter / Attack (non-stealthy)	1,882	602	1,712	2,062	2,262	2,042
Air	Fighter / Attack (stealthy)	1,503	2,463	343	1,323	1,583	1,263
Air	Manned ISR / ASW / C2	301	322	241	284	341	346
Air	Unmanned ISR / Strike (non-stealthy)	433	918	343	433	427	427
Air	Unmanned ISR / Strike (stealthy)	0	180	0	110	190	150
Ground	Advise and Assist Brigades (A/C)	0	3	0	2	4	0
Ground	Advise and Assist Brigades (R/C)	0	0	0	0	0	0
Ground	Armored BCTs (Active)	9	12	6	12	10	11
Ground	Armored BCTs (Guard / Reserve)	6	8	4	4	2	3
Ground	Combat Aviation Brigade (Active)	10	13	7	10	12	10
Ground	Expeditionary Combat Aviation Brigade (R/C)	10	13	7	10	10	10
Ground	Infantry BCTs (Active)	14	15	9	10	12	9
Ground	Infantry BCTs (Guard / Reserve)	19	19	12	16	20	23

Option Category	Force Structure Category	Baseline	AEI	Cato	CNAS	CSBA	CSIS
Ground	Long-Range Missile Battalions (A/C)	0	1	0	0	1	6
Ground	Short-Range Missile Battalions (A/C)	11	16	11	17	29	15
Ground	Short-Range Missile Battalions (R/C)	14	18	14	14	14	14
Ground	Stryker BCTs (Active)	7	7	4	7	6	9
Ground	Stryker BCTs (Guard / Reserve)	2	2	2	2	0	0
Ground	USMC Amphibian Battalion (Active)	3	3	2	2	3	3
Ground	USMC Amphibian Battalion (Reserve)	1	1	0	1	0	1
Ground	USMC Armored Battalion (Active)	2	2	1	1	2	0
Ground	USMC Armored Battalion (Reserve)	1	1	1	1	0	0
Ground	USMC Artillery Battalion (Active)	8	10	5	7	8	8
Ground	USMC Artillery Battalion (Reserve)	3	3	2	2	0	3
Ground	USMC Aviation Group (Reserve)	2	2	2	2	2	2
Ground	USMC Chem/Bio Response Force (A/C)	1	1	1	1	1	1
Ground	USMC Civil Affairs Group (R/C)	4	4	3	4	4	4
Ground	USMC Infantry Battalion (Active)	24	37	18	23	27	24
Ground	USMC Infantry Battalion (Reserve)	8	8	5	7	8	8

Option Category	Force Structure Category	Baseline	AEI	Cato	CNAS	CSBA	CSIS
Ground	USMC LAR Battalion (Active)	3	3	2	2	3	3
Ground	USMC LAR Battalion (Reserve)	1	1	1	1	0	0
Missile Defense	Long Range AMD Batteries (A/C)	8	9	1	10	10	12
Missile Defense	Medium Range AMD Batteries (A/C)	58	58	58	60	78	58
Missile Defense	Short Range AMD Batteries (A/C)	13	86	13	45	101	48
Munitions	Direct Attack	Data Unavailable	600	-28,594	8,000	85,800	-2,000
Munitions	Long-Range A2A	Data Unavailable	2,500	-1,600	700	3,900	1,500
Munitions	Long-Range Stand-Off	Data Unavailable	0	0	0	0	0
Munitions	Short-Range A2A	Data Unavailable	0	-1,000	0	2,400	0
Munitions	Short-Range Stand-Off	Data Unavailable	0	0	0	10,000	1,000
Munitions	Survivable Long-Range Stand-Off	Data Unavailable	800	-766	2,300	5,400	2,800
Munitions	Survivable Short-Range Stand-Off	Data Unavailable	0	0	0	2,700	1,100
Nuclear Forces	Ballistic Missile Subs	13	13	13	13	13	13
Personnel	Air Force Active End Strength	317,000	333,900	218,800	318,600	344,200	309,800
Personnel	Air Force Civilians	171,000	171,000	110,000	159,500	161,000	162,500
Personnel	Air Force Guard/Reserve End Strength	173,700	162,400	149,300	173,300	177,900	188,700
Personnel	Army Active End Strength	450,000	522,400	350,000	448,900	505,300	465,300

Option Category	Force Structure Category	Baseline	AEI	Cato	CNAS	CSBA	CSIS
Personnel	Army Civilians	196,000	196,000	147,000	181,700	166,000	186,200
Personnel	Army Guard / Reserve End Strength	530,000	617,700	392,300	477,700	488,700	496,900
Personnel	Marine Corps Active End Strength	182,000	215,800	123,100	174,100	187,100	175,600
Personnel	Marine Corps Civilians	21,460	21,460	14,460	20,360	18,960	20,360
Personnel	Marine Corps Reserve End Strength	38,500	38,500	28,100	36,700	29,700	34,800
Personnel	Navy Active End Strength	323,100	338,700	258,200	313,100	332,800	320,800
Personnel	Navy Civilians	179,106	179,106	126,106	166,106	166,606	170,006
Personnel	Navy Reserve End Strength	58,900	58,900	48,500	56,900	58,900	48,900
Personnel	OSD and Defense Agency Civilians	193,000	193,000	145,000	179,100	182,600	183,300
Sea	Aircraft Carriers	11	11	7	10	11	10
Sea	Amphibious Ships	36	44	24	25	36	36
Sea	Attack Subs	44	59	35	57	52	46
Sea	Combat Logistics Force	30	50	20	32	46	30
Sea	Cruise Missile Subs	1	0	1	4	1	4
Sea	Large Surface Combatants	99	109	71	86	99	93
Sea	Small Surface Combatants	37	65	17	59	76	37
Sea	Support Vessels	36	45	32	59	50	49
Space / Cyber / Comms	Cyber Teams	133	133	133	133	133	133
Space / Cyber / Comms	GPS (Hosted)	0	50	0	30	65	55
Space / Cyber / Comms	GPS (MEO)	31	34	31	31	51	41

Option Category	Force Structure Category	Baseline	AEI	Cato	CNAS	CSBA	CSIS
Space / Cyber / Comms	Missile Warning (GEO/HEO)	8	13	8	8	-4	8
Space / Cyber / Comms	Missile Warning (Hosted)	0	2	-2	0	0	1
Space / Cyber / Comms	Narrowband SATCOM (Commercial - Satellite Equivalents)	0	3	0	0	10	10
Space / Cyber / Comms	Narrowband SATCOM (Military)	5	5	5	5	7	12
Space / Cyber / Comms	Protected SATCOM (Strategic)	6	9	6	6	6	5
Space / Cyber / Comms	Protected SATCOM (Tactical)	0	1	0	0	0	1
Space / Cyber / Comms	Wideband SATCOM (Commercial - Satellite Equivalents)	0	3	0	5	5	10
Space / Cyber / Comms	Wideband SATCOM (Military)	10	20	10	10	12	17

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