

August 7, 2023

## **The Economics of National Defense in Great Power Competition**

Tensions between the United States and China continue to worsen, with the two nations hurtling toward each other in a geopolitical game of chicken that, in a worst case scenario, could potentially end up in war. In the distance, a few possible off-ramps still hold promise, but the two powers are charging at each other so fast that it will be tough to make the turn onto any of them. If war comes, it will most likely start with a Chinese grab for Taiwan. However, the war wouldn't really be a fight for control of a subtropical island slightly bigger than Maryland, some 100 miles off the southeast coast of China. Taiwan would only serve as the immediate excuse for war. The war would really be a contest for the world's future. The war would pit the vision and fundamental interests of the U.S. and its geopolitical and economic bloc against the vision and interests of the China/Russia<sup>1</sup> bloc.

If war comes, the spoils of victory would be what we call the three *Ts*: ***Territory***, ***Technology***, and ***Trade***. To the victor would go the territory of Taiwan, or for the U.S., the assurance of Taiwan's territorial integrity. Keeping Taiwan unshackled would preserve the global space for democracy and freedom and ensure that

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<sup>1</sup> Given the increased geopolitical and economic cooperation between China and Russia, we now refer to their bloc jointly. However, we still believe China is the main driver of this bloc.

Taiwan remains a bulwark against the authoritarian rule of the Chinese Communist Party. To the victor would also go Taiwan's unique factories and workers producing the world's most advanced semiconductor technologies. Finally, the victor would secure the ability to restrict or keep open the vital sea lanes and trade routes feeding key U.S. allies like Japan and South Korea.

Since both the U.S. bloc and the China/Russia bloc could deploy masses of highly destructive weapons and concentrate them on a limited objective, a war over Taiwan could be relatively short—days or weeks, rather than months or years. All the same, properly preparing for such a war would require a long-term effort. The military buildup that has given China the world's largest navy and put it in position to possibly win such a conflict has continued for far more than a decade. [As the West has learned in its struggle to arm Ukraine against Russia's invasion, "Great Power" military preparedness requires full-scale exploitation of a country's national resources and a large, advanced defense industry.](#) In this report, we discuss the economics of defense in today's Great Power competition and what it means for investors.

### **What Is Defense Economics?**

Defense economics is the science that studies how building and maintaining a country's military force affects its economy, and vice versa. The fundamental problem in defense economics is that once a country's leaders decide on the size, structure, technologies, and operating modes that its armed forces need to deter or defeat the

country's adversaries, that decision implies a certain level of input from the country's resources. Operating and maintaining the armed forces will also affect the country's overall output, wages, prices, and the like. In turn, the size of the economy, its growth rate, and other macroeconomic conditions will affect the feasible size and make-up of the armed forces.

Another important consideration is that defense is a "public good," meaning it's both *non-excludable* (someone can enjoy the benefit of national security even if he or she hasn't helped pay for it), and *non-rival* (when one person enjoys the benefit of national security, it doesn't diminish the ability of someone else to enjoy it, too). The free market therefore can't be relied on to produce national defense or determine how big it should be. Instead, the government provides national security, and public officials resolve key issues through the political process and their own analyses.

Finally, defense economics can address a range of more specific issues, often using advanced statistical and mathematical tools like systems analysis or linear programming, as promoted by Defense Secretary Robert McNamara from 1961 to 1968 and carried out today by the Pentagon's Office of Cost Assessment and Program Evaluation. For example, defense economics looks at how to foster a defense industrial base (DIB) that can innovate and produce the needed weapons, with wartime surge capacity, in an efficient and low-cost manner. It looks at how to design efficient, resilient supply and logistics systems and even considers new, innovative ways to finance the country's defense effort, as discussed below.

### **Cold War vs. Counter-Insurgency**

During the War on Terror, which we mark from 1993 to 2021, the U.S. military mostly

focused on counter-insurgency operations. After the short initial invasion operations against Afghanistan in 2001 and Iraq in 2003, the armed forces spent two decades fighting small, rag-tag groups of terrorist irregulars, using similarly small units like companies and platoons. The U.S. Army "commands two levels up from its fighters," so it morphed from being centered on divisions of 15,000 to 20,000 troops to being organized largely around brigade combat teams of 4,000 to 5,000 troops. The armed forces and the Intelligence Community became much more tactically oriented and reliant on special operations forces, which were deployed to expeditionary bases in the Middle East and Central Asia, with long, expensive supply lines stretching halfway around the world. Overall personnel levels weren't appreciably increased, but operating tempos were pushed to extremely high levels. Troops were often cycled into the combat theater for multiple deployments.

*If U.S. voters decide that their country should prepare to deter and, if necessary, fight the China/Russia bloc, we believe the U.S. military will need to shift decisively away from its structure and operations in the War on Terror. Instead, we think the armed forces would need to shift back to something like the big, heavy, expensive military of the Cold War, the last time the U.S. faced a Great Power, which in our reckoning ran from 1950 to 1992.*

In Table 1 (next page), we summarize the key differences in military size, structure, operations, and financing during the Cold War versus the War on Terror. Naturally, a modern Great Power rivalry with the China/Russia bloc wouldn't require the exact same military as in the Cold War. Nevertheless, we do think an effective China/Russia-focused force would rely once again on big, massed strategic and

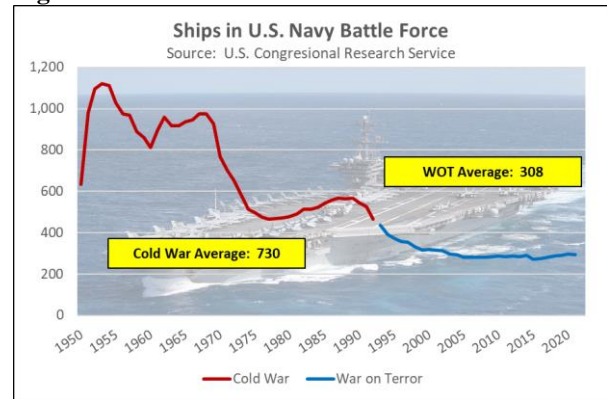
Table 1 Great Power Competition vs. Counter-Insurgency: Different Economic Problems	
Cold War (Great Power Competition)	War on Terror (Counter-Insurgency)
<ul style="list-style-type: none"> <li>• <b>U.S. Forces</b> <ul style="list-style-type: none"> <li>• Massed strategic &amp; conventional forces</li> <li>• Big personnel cohort, modest ops tempo</li> <li>• Permanent bases / regularized logistics</li> <li>• Big demands on defense industrial base</li> <li>• Big demands on federal budget</li> <li>• Big demands on economy</li> </ul> </li> <li>• <b>Adversary Forces</b> <ul style="list-style-type: none"> <li>• Same as above</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>U.S. Forces</b> <ul style="list-style-type: none"> <li>• Emphasis on smaller SOF operations</li> <li>• Intense use of limited personnel</li> <li>• Expeditionary basing / logistics</li> <li>• Low demand on defense industrial base</li> <li>• Modest demand on federal budget</li> <li>• Small demand on economy</li> </ul> </li> <li>• <b>Adversary Forces</b> <ul style="list-style-type: none"> <li>• Focus on personnel recruiting</li> <li>• Ad hoc, secretive financing</li> </ul> </li> </ul>

conventional weapon systems, especially missiles and navy vessels, to counter China’s advantage in those areas. Manning those systems and avoiding the excessive deployments of the War on Terror would likely require a big increase in troop counts, although some savings could be achieved by refocusing on permanent bases and regular logistics at home or on allied territory. One key change would be to rebuild and expand the DIB to churn out the needed weapons and replenish the nation’s ammunition stockpiles. As we have argued elsewhere, all these efforts would likely require significantly higher defense spending.

In the next few paragraphs, we flesh out some of the size and financing differences between the Cold War military and that of the War on Terror. During the Cold War, for example, the U.S. Navy averaged 730 ships in its battle force, including surface ships and submarines. In the War on Terror period, however, the battle force was cut by more than 50%, to an average of just 308 ships, and it currently has only 294 (see Figure 1). [The reduction in naval power is especially concerning because command of](#)

[the seas has traditionally been vital to U.S. military and economic security.](#)

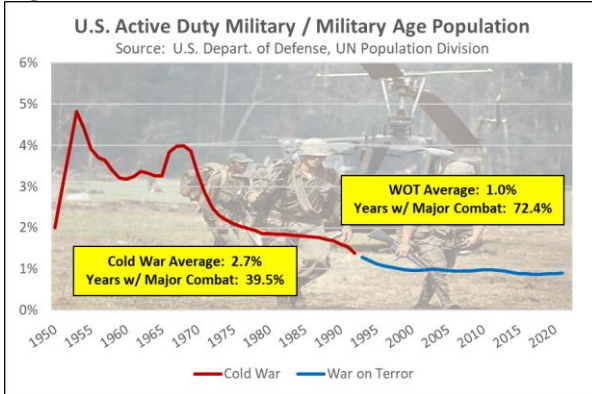
Figure 1



Similarly, total U.S. active-duty personnel averaged 2.5 million during the Cold War but fell to just 1.4 million in the years since. Active-duty personnel during the Cold War averaged 2.7% of the U.S. military-aged population (those aged 16-49). During the War on Terror, active-duty personnel made up only 1.0% of that cohort. That decline is even more striking if you consider that combat operations became much more frequent in the War on Terror. By our calculation, the U.S. military conducted major combat operations in 39.5% of the

Cold War years (Korea, Vietnam, Grenada, and the Gulf War). In contrast, 72.4% of the War on Terror years included major combat (the “long wars” in Afghanistan and Iraq). Increased combat with a smaller force helps explain why U.S. troops were so over-worked during the War on Terror (Figure 2).

Figure 2



Defense downsizing after the Cold War not only reduced the number of military-age people in service, but it also cut the amount of the overall economy going to defense, i.e., the defense burden. U.S. defense spending as a share of gross domestic product (GDP) was nearly cut in half, from 7.1% to 3.6% (see Figure 3), and defense outlays as a share of total federal outlays were cut by more than half, from 38.9% to 17.4% (see Figure 4). That share fell not only because the military was cut, but also because Congress spent much of the resulting “peace dividend” on other programs.

Many other indicators, from the number of nuclear warheads deployed to the quantities of bomber aircraft, would tell the same story. The U.S. armed forces during the War on Terror from 1993 through 2021 were only about half as big as they were during the Cold War. Just like private firms, the Department of Defense (DOD) also adopted a number of popular management philosophies aimed at boosting efficiency and keeping utilization rates high. Lulled by

a belief that the newly globalized world was safer and more predictable, the military adopted the equivalent of just-in-time inventory systems, which kept stockpiles as low as possible. [Not only did DOD keep personnel counts low, sending many troops on multiple combat tours in Afghanistan and Iraq, but it also kept assets like aircraft carriers and subs operating at excessively high rates, contributing to a range of maintenance issues today.](#)

Figure 3

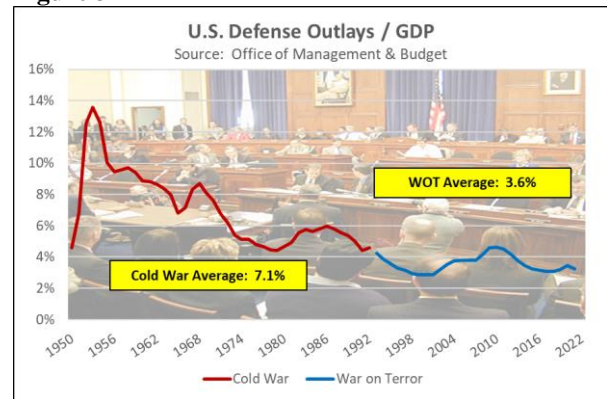
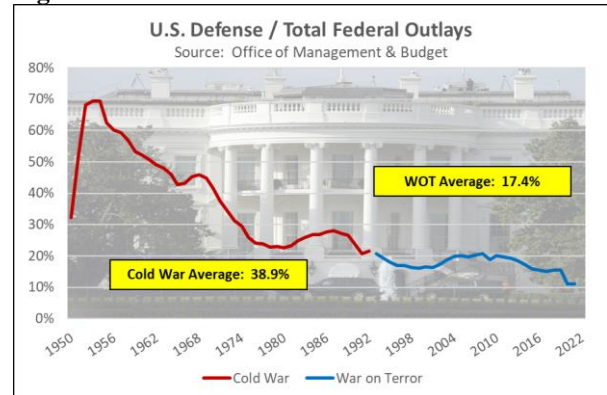


Figure 4

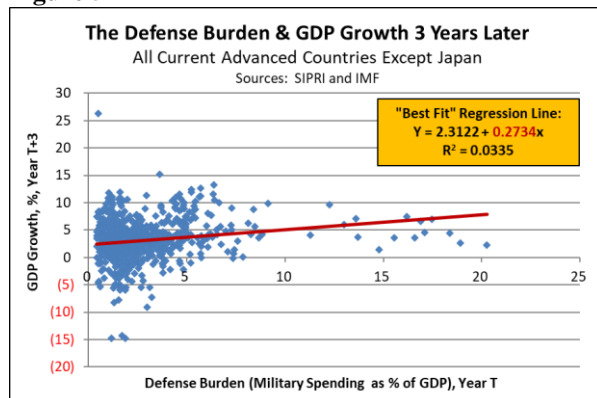


Today’s unusually small military means the U.S. has plenty of economic capacity to rebuild it, if voters decide they want to. Looking at the defense burden shown in Figure 3, we note that CIA research during the Cold War suggested a country’s defense burden can rise to about 10% of GDP before



it starts to impinge on economic growth.<sup>2</sup> For defense burdens below 10% of GDP, the research suggests higher defense spending is not associated with slower growth rates. Indeed, higher defense spending correlates weakly with higher economic growth (see Figure 5). We have often argued that U.S. voters have become weary of the costs of maintaining global hegemony, and many (especially on the far left and far right of the political spectrum) would prefer to step back from that role. Nevertheless, the takeaway here is that if U.S. voters decide they want to stand up to the threats from authoritarian countries like China and Russia, then the U.S. certainly has the resources needed to bulk up its military power again.

**Figure 5**



### The Politics of Defense Spending

Even if U.S. voters decide they want to rebuild their armed forces, doing so will involve trade-offs. Rechanneling the nation's resources into a bigger, stronger military will require political decisions and horse-trading. After all, economic decisions almost inevitably involve politics. And even if popular sentiment supports military

<sup>2</sup> In the 1980s, near the end of the Cold War, the CIA estimated the Soviet Union was spending 16%-18% of its GDP on defense. Other analysts thought the defense burden was even higher. The large burden of defense is widely seen as a cause of the Soviet Union's collapse.

rebuilding, it will take time for the political decisions to be made and implemented.

To understand the trade-offs involved, it may help to review some of the key tasks needed to rebuild the military:

**Expand the Size of the Force.** The number of deployed weapons systems, from subs and bombers to satellites and drones, would likely need to increase, consistent with the threat, the adopted strategy, and the budget. Military infrastructure, support and maintenance equipment, inventories and ammunition stockpiles, and troop counts would also need to expand.

**Boost the Defense Industrial Base.** To produce the needed weapons systems and related goods, develop new defense technologies, and ensure surge capacity in time of international tensions, the available DIB would have to expand as well. [Given the premium on high-tech weaponry in modern warfare, it would be important not just to rebuild the Cold War DIB.](#) Rather, private firms involved in cutting-edge technologies like artificial intelligence would need to be incentivized to participate, probably by making it easier and more lucrative for them to contract with DOD. To truly expand the capacity of the available DIB, more weapons, equipment, and other goods might even have to be bought from allied countries, as discussed below.

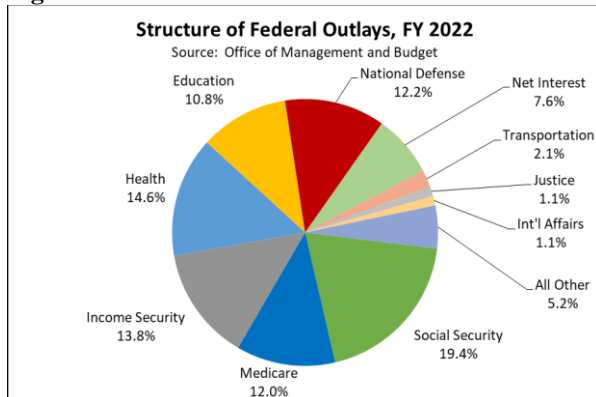
### Leverage Dual-Use Goods and Services.

One top-cost category for the defense budget is "operations & maintenance." The bigger the military becomes, the more it will need inputs like fuel, catering services, and aircraft repair, all of which are often provided by private firms whose main business is to serve civilians. DOD will need to make sure it has increased access to these dual-use goods and services.

**Ensure the Availability of Personnel.** [Even today, the armed forces are having trouble meeting their recruitment goals.](#) That’s often the case when the economy is strong and labor demand is high. Other problems include the excessive burdens placed on troops during the War on Terror. Given that most of today’s recruits come from military families, the traumatic experiences of War-on-Terror veterans are likely discouraging today’s “military brats” from signing up. Some analysts think young people are also turned off by the military’s recent efforts to promote diversity. [Finally, fewer youth today can meet the stringent health and physical standards of today’s military.](#)

**Manage the Budget Size and Trade-Offs.** One major challenge would be to identify the military spending needed to efficiently deter or defeat the China/Russia threat, consistent with the adopted strategy, the constraints listed above, and the budgetary trade-offs. The budgetary trade-offs are likely to be especially challenging, given that the post-Cold War peace dividend has already been committed to a range of other uses, from tax cuts to increased social spending. Congress has probably developed a vested interest in those uses, so raising taxes or cutting civilian spending to benefit defense is likely to be sharply resisted (see Figure 6).

Figure 6



**Manage Economic Impact.** Finally, decisions on defense spending will require consideration of the impact on the economy. As discussed above, the U.S. economy today has plenty of capacity to support a larger military effort. In theory, the defense budget could nearly triple before reaching the 10% of GDP level associated with weaker economic growth. Doubling the budget would merely return the defense burden to the Cold War average, but just hiking the defense budget to that level without cutting civilian spending might fuel higher price inflation as defense production puts greater demands on limited resources.

**Analysis and Investment Ramifications**

As mentioned above, populist isolationism, especially on the far left and far right of the political spectrum, could derail any effort to rebuild the U.S. military. We don’t address the fallout of a “no defense budget hike” in this report. Rather, we assume for purposes of this analysis that today’s bipartisan consensus between centrist Republicans and Democrats holds, and that Congress agrees to hike defense spending and substantially rebuild the armed forces.

In a scenario where the U.S. decides to substantially rebuild its military, the economic and political questions are how to mobilize the nation’s resources for defense, and how to do it in a timely manner. We see two broad types of strategies, which we call *coercive* and *incentivized*:

- **Coercive.** In the urgency of a national security crisis, or merely in recognition that national defense is a public good, the U.S. government has often used the full extent of its power. To pay for the armed forces, defense industry, and personnel resources capable of deterring or defeating the China/Russia bloc, the most obvious coercive measure would be to raise taxes. Congress could also

impose a draconian shift out of nondefense budget funds. Even more coercive, the president could make more use of the Defense Production Act to force private firms to produce certain goods or services. The government might even take over essential DIB facilities. However, we currently see little or no appetite for such measures. We do not expect them to be used in the near term.

- **Incentivized.** Since tax increases and other more coercive steps are political non-starters in the U.S. these days, we think any defense spending increases in the near term will be meaningful but not necessarily dramatic or sharp. To get more bang for the buck, we think the government will try to supplement the formal defense budget increases with additional incentives and bargaining. Rather than “sticks,” the government will rely mostly on “carrots.” We think the U.S. is especially likely to adopt the following incentive measures, some of which may be highly innovative:
  - ✓ ***Contracting Reform.*** [To provide incentives for defense firms to upgrade or expand their production facilities, Congress has already granted DOD more leeway to buy weapons systems and ammunition on multi-year contracts.](#) It is also considering offering inflation adjustments. Finally, to encourage bids from small civilian firms and other nontraditional suppliers, we expect Congress to ease general defense contracting requirements.
  - ✓ ***Loans, Grants, Equity.*** [To access the cutting-edge technologies being developed by newer, smaller firms in the private sector, last year DOD set up an Office of Strategic Capital to](#)
    - offer loans, loan guarantees, and non-dilutive grants modeled on those of the Small Business Administration and Small Business Investment Companies. DOD and the Intelligence Community have also established funds modeled on private equity firms to provide start-up or expansion capital for firms working in critical technologies. We think more innovative public/private partnerships are in store, such as sales/leasebacks involving defense production facilities.
  - ✓ ***“Build Allied.”*** Finally, we think the U.S. will lean more heavily on its foreign allies. Already, the current administration has worked to rebuild U.S. relations with the other liberal democracies, such as Japan, the U.K., and the European Union. It is urging them to boost their defense capabilities and practice operating together with the U.S. in multilateral military exercises and joint production efforts [like the AUKUS deal, under which Australia will buy nuclear-powered attack subs in partnership with the U.K. and the U.S.](#)<sup>3</sup> Finally, we see signs that the U.S. is becoming more open to procuring weapons from its allies. [George Mason University’s recent study entitled “Build Allied” shows how that could be done.](#) Of course, sourcing from countries like Japan or South Korea would create supply-chain security issues, but they could be addressed. Besides, it wouldn’t

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<sup>3</sup> Operating jointly with allies not only offers combat synergies, but it also boosts the total resources available for defense. Based on data from SIPRI, we estimate total defense outlays by Japan, South Korea, Australia, New Zealand, and the non-U.S. NATO countries amounted to some \$493.9 billion in 2022, on top of the U.S. outlays of \$876.9 billion.

be surprising to see the U.S. buy more defense goods from closer countries like Mexico or Canada.

For investors, growing tensions between the U.S.-led bloc and the China/Russia-led bloc will create risks. On any given day, a country in either bloc could unexpectedly clamp down on cross-border trade, investment, technology, or human capital flows. Nevertheless, we think the situation also creates opportunities. From the discussion above, it's clear that the most interesting opportunity is in the **defense industry**. Traditional defense firms are likely to see increased revenues over time, while contracting reform could make their revenues more predictable and help ensure their profit margins. DOD's new support for

**advanced technology firms** also suggests there will be opportunities for large and small firms in artificial intelligence, supercomputing, cybersecurity, software, and the like. Finally, the growing need for the U.S. to lean on allies suggests that investors should also keep their eyes open for opportunities in **foreign defense and technology** firms.

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