Standing Tall: Maintaining US Economic and Military Competitive Posture During Turbulent Times

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Paul Kennedy’s 1987 book, The Rise and Fall of Great Powers demonstrated that throughout history, great powers fell into decline when their economic power failed to support their military and political ambitions. Ways, ends, and means fell out of balance. This paper contends that Paul Kennedy’s basic premise applies to the United States in 2022.

The 2017 National Security Strategy used the phrase “Great Power Competition”—a phrase that has been used widely since. Recently, the terminology has been refined to “Strategic Competition with China and any other nation.”¹ No matter the label, it is clear that America has reentered a period of competition. Thus, we should ask, “what is the current competitive posture of the United States?” This competition is becoming increasingly tense. As recently as the January 2022 Davos World Economic Forum, China’s President Xi Jinping pointedly said that there would be grave consequences for any nation that attempted to shift the economic balance by interfering with China’s global supply chains, their Belt and Road initiative, etc.

National power traditionally consists of three elements, as taught at the United States War Colleges: economic, military, and political power. This paper examines the current economic and military competitive posture of the United States. Our contention is that America is living beyond its means and that both economic and military elements are in decline from a competitive standpoint. We will not attempt to assess our standing in political competition with potential adversaries, but clearly challenges exist in that realm, as well.
Addressing the economic and military competitive status of the United States will require some reprioritization—and concessions—by Americans. Fixes may occur through new technologies and better strategies, and our purpose here is to foster such discussions and developments.

Measuring national power is not exact. We investigate specific areas of concern for both economic and military competition, using available data. Although we examine them individually, they are strongly interrelated, and assessment of the overall competitive position is qualitative.

Economic

The United States’ current competitive economic trajectory is going in the wrong direction as America becomes more deeply in debt, with a record high in both actual debt and debt as a percentage of Gross Domestic Product (GDP). Simultaneously, mandatory federal spending has surpassed discretionary spending. Finally, there is growing income inequality, which, left unchecked, can lead to increased social unrest. Any of these items by themselves are cause for concern. But, if not addressed together, the United States will be challenged in its global competitiveness.

Figure 1 shows the federal outlays (spending), receipts (income from taxes and other sources), and deficits from 1940 to 2025, in constant year 2012 dollars. Note that America has been in a severe deficit status since the early 2000s. The 2021 to 2025 figures are Office of Management and Budget estimates, which tend to be optimistic.
Figure 2. US Budget Snapshot Federal Spending per Person ($K). Data Sources: Office of Management and Budget Historical Tables (The White House) and Population of the United States (United States Census Bureau). The latest OMB Data uses 2012 data for constant year dollars. To convert to 2021 dollars, figures would need to be multiplied by 1.19.

Figure 3. US Budget Snapshot Mandatory/Discretionary Spending (1962-2025). Data Sources: Office of Management and Budget Historical Tables (The White House) and Population of the United States (United States Census Bureau). The latest OMB Data uses 2012 data for constant year dollars. To convert to 2021 dollars, figures would need to be multiplied by 1.19.
Figure 4. US Budget Snapshot Mandaory Spending as a Percent of Federal Outlay. Data Sources: Office of Management and Budget Historical Tables (The White House and Population of the United States (United States Census Bureau).

Figure 5. United States National Debt to GDP. Sources: Congressional Budget Office and Federal Reserve Bank of St. Louis.
Since population growth could explain the growth in spending, Figure 2 is included to show federal spending per person from 1950 to 2021 in constant year dollars (2012). If federal spending aligned with population growth, the value would be constant. It is not. In fact, the federal government today spends three to four times what it spent per person in 1950.

Moreover, in constant year dollars, total federal spending is approximately six times greater than post World War II spending, while federal spending per person has increased four times. One reason for this change is the nature of government outlays over the past 50 years. Figure 3 shows the evolution of mandatory and discretionary programs over time. Figure 4 shows the continued growth of the mandatory portion of the budget as a percentage of total outlays. In 1962, about 25% of federal outlays were “mandatory” (Social Security, Medicare, Medicaid, interest on the debt, etc.). The best estimate is that by 2025, the mandatory spending will account for well over 70% of federal outlays.

While the mandatory outlays have been growing, so has the national debt, both in constant year dollars and as a percentage of GDP. As of 22 January 2022, the United States debt is $29.8 trillion, which is the largest in American history. Further, the ratio of debt to GDP is also the highest in American history, is at 127.55%. This is even 10% greater than the end of World War II (see Figure 5). A September 2020 report by the Congressional Budget Office projects that the debt will continue to grow for the next 30 years, reaching 200% of GDP by 2050. A recent report by the World Bank states that a country that has a debt to GDP ratio greater than 77% over an extended period of time will experience reduced economic growth. The United States is well beyond 77%.

Methods to address the debt are limited because 70% of the federal outlays are mandatory. A change in mandatory spending will require a change in the law, which means the “easiest” lever is discretionary spending. Defense makes up half of the discretionary budget. Unfortunately, since 2008, there have only been three years (2008, 2014, and 2015) where the United States budget deficit for the year was smaller than the entire Defense budget. Said another way, Congress could zero out the Defense budget, and America would still have an increase in debt. Therefore, America will not be able to address this debt without changes to the mandatory spending programs, which is not a path that will be popular with most Americans.

Why does debt matter? There are several factors, but consider these two—servicing the US debt and loss of US ability to receive loans. The cost to “service” the debt continues to rise. In 2020, the cost was $522 billion—at minimal interest rates (2.4% in 2019 and 1.3% in 2020). A 2019 study projected the cost to service the debt will be larger than the Defense budget by 2025. This projection was based on estimates before the COVID-19 pandemic; since the start of 2020, the nation has added $6 trillion to the debt, which increases the cost to service the debt. With the size of the actual and relative debt, it is very possible there will be restrictions on the United States’ ability to receive loans. Loan restrictions will limit the United States’ capacity to participate freely in the global economy, thereby putting America at a competitive disadvantage.

Debt held by private citizens is also rising; it has more than tripled as a percent of GDP since the middle of the 1950s—from about 50% of GDP to over 150% of GDP. There are multiple causes for this, but one contributor has been the cost of higher education. Long-term student loans contribute to economic trends affecting competitiveness of the United States, including income inequality. In short, Americans, like America, are living beyond its means.

In a healthy economy, the gap between the very rich and very poor tends to decrease—a solid economy raises all boats. As measured by the Gini index, an index that measures income inequality in a nation, the US is going in the wrong direction. The 2020 Census Bureau reports that the Gini Index of the US has grown from 0.36 in the late 1960s to 0.46 today. Worldwide, the Gini coefficient is strongly correlated with community violence and social unrest. The United States had the 27th highest Gini coefficient of 143 largest nations; and no NATO nation had a higher Gini coefficient.

The United States income inequality now is more like a third world nation than an advanced liberal democracy. If this trend is not reversed, social unrest will likely grow. Simply, a nation at war with itself is not likely to stay competitive globally.
We have shown that the US national debt is growing rapidly, mandatory expenditures have taken over federal spending, and income inequality weakens our competitive posture. Economic deficiencies of this sort might not matter if we can produce what we need on our own. But when we are beholden to others, who might hold our debt, for essential goods and/or services, then national security can be jeopardized. We give two examples.

National Security Supply Chain Fragility

Microelectronic Supply Chain Vulnerability. Currently, the United States only produces 12% of the world supply of microelectronics, and very little at state-of-the-art (SOTA).\(^\text{16}\) This is critical, because modern military systems depend upon a large set of microelectronics—they are the brains and eyes of modern systems. By 2030, the Semiconductor Industry Association predicts that the United States share of global production will decrease to 10%, while China and Taiwan will produce 50% of global microelectronics. Together with South Korea, over 70% of the world supply will be concentrated in one area of the world. Since the US consumes about 48% of the world semiconductor market, the United States is dependent on non-domestically produced chips. Potential adversaries could withhold access or insert “bugs” (e.g., Trojan horses, corrupted software, remote triggers, and so forth), that could conceivably allow an adversary to turn systems on or off remotely or alter the performance in some way. Even without inserted triggers, a monopolistic supplier base puts other nations at an economic disadvantage. This is especially true in an industry that requires expensive and lengthy investment periods before production capacity actually increases.\(^\text{17}\) If the supply chain moves to a monopoly, competitive balance is eroded.

The recent shutdown of the Colonial Pipeline in the Eastern United States occurred when Russian hackers took control of the pipeline operating systems. Suppose that this were not a hacker group, but a group enabled by nondomestic chips with embedded backdoors. Similarly, the auto industry found itself at the mercy of a product monopoly foreign supply chain, as a shortage of chips caused a global automotive industry contraction in the amount of $210 billion.\(^\text{18}\)

When national security is dependent upon a product, there is really no choice but to spend as needed to ensure economic and security self-sufficiency.

Rare Earth Elements: The American Geophysical Institute estimates that China currently controls 97% of the global supply of rare earth elements (REEs).\(^\text{19}\) Many high-end defense systems use REEs and are essential for night vision, SONAR and RADAR systems, satellite communications, heads-up displays in fighter jets, laser systems such as guided weapons and laser targeting systems, and fiber optic cables. Even nuclear threat detection systems use REEs (lanthanum) to detect gamma radiation.\(^\text{20}\) The automotive industry is also highly dependent on REEs. Currently, most systems relying on REEs do not have a suitable substitute. This is not an acceptable position for the United States, as REEs provide real capabilities needed by the Department of Defense (DoD), and society in general.

The challenges with a lack of REEs could be remedied by stockpiling (which could be expensive), restarting refinement or production domestically, or by finding a suitable substitute. Starting domestic processing has inherent risks because of the toxicity of processing the elements. It seems that the most logical approach would be a combination of stockpile coupled with a robust research program to find suitable substitutes. The nation does not have such a significant research effort at present.

Our nation is highly dependent on foreign sources for many other supplies and services. For example, pharmaceuticals are important to the health of the nation’s population. The COVID pandemic highlighted the pharmaceutical supply chain vulnerability in the US (and the West). The key point is that in cases where the United States has critical dependencies that threaten national security, the nation must increase access from domestic or most favored nation sources.

Military

In August 2021, Admiral Chris Aquilino, Commander United States Indo-Pacific Command stated at the Aspen Security Conference that the United States still has the finest military in the world. The United States continues to spend more on defense than any other nation by a wide margin. Resulting capabilities of the military cover a wide range of mission sets.
The capabilities required for successful future warfighting, however, will be different than those of the past, yet the DoD is still largely focused on platforms that may not be relevant in that future fight. People talk of a 355 ship Navy, up from fewer than 300, now.21 In 2019, the Center for Strategic and Budget Analysis presented a study indicating that the Air Force needed to grow to 386 squadrons—an increase by about 50 squadrons. Instead of talking in terms of numbers of platforms, the discussion should identify what the nation needs the DoD to accomplish and then, given that mission set, determine how the budget can be realigned to meet those needs.

The Strategic Air Command of the 1950 through the 1980s had the motto “Peace is our Profession.” In fact, a primary role of the military in an era of great competition is to be strong enough to deter conflict. In any discussion of military competitive posture, it is an unstated goal to have the strength to deter major conflict. Unfortunately, the United States military is delinquent in modernization of capabilities in long-term competition with adversaries.

The bedrock of national security is the nuclear triad. Currently, the DoD is modernizing all three legs of the triad, with the “Ground Based Strategic Deterrent” replacing Minuteman-III; the Columbia class submarine replacing the Ohio class; and the B-21 Raider and Long-Range Strike Option replacing the B-2 and Air Launched Cruise Missile. The Air Force first fielded Minuteman-III in 1970 with an expected missile life of 10 years. Through several “Service Life Extension Programs,” the missile has remained viable, but there is no more viable extension available, according to Admiral Chas Richard, the Commander of the United States Strategic Command.22 The Ohio class submarine was first fielded in 1981; the first will be replaced in 2031. A similar situation exists with the Air Launched Cruise Missile, which was commissioned in the early 1980s with a 10-year life expectancy.

In May 2021, the CBO estimated the cost of nuclear modernization over the period 2021 to 2030 will be $634 billion. Since the overall average total DoD RDT&E and Procurement Budget Request is about $250 billion per year, nuclear modernization will consume over 25% of the
research and procurement budget for the next decade. This does not include the cost of modernizing nuclear command and control, another multi-hundred-billion-dollar bill over the coming decade. Subsequent costs after 2030 will be even greater.

Simultaneously, many other systems are entering the high-cost phase, to include full rate production of the F-35, the KC-46, and Next Generation Air Dominance Fighter, Virginia Class Submarines, Ford Class Aircraft carrier, and missile defense systems. We have multiple aging and expensive platforms that need to be replaced simultaneously. Much of this “bow wave” came about because of decisions that individually were logical, but in the aggregate, deferred a lot of modernization by 30 years. This started with the “Peace Dividend” following the fall of the Berlin Wall, to a post 9/11 focus on counterinsurgency, to the “Budget Control Act” of 2011. The cumulative effect places the United States competitive advantage at risk.

Assuming that these are the modernization platforms that align to future mission sets, the costs will nonetheless be staggering. The sustainment costs alone will squeeze out any other research and modernization efforts. If these are not the platforms needed for future missions, then the issue is: How should the Department redirect funding, and what investments are required?

Figure 6 shows the historical trends of the DoD budget in constant year dollars, from an Oct 2021 Congressional Budget Office Study. Figure 7 shows the historical DoD budget as a percentage of GDP. The budget includes all aspects of Defense spending, from personnel costs, including (rising) health care, to acquisition and sustainment, operations, jet fuel, training, retiree pension payments, and when necessary, wartime operations. The DoD budget must address continued increases in “entitlements” (retiree pay, health costs for retirees, etc.). For instance, from 2020 to 2021, the cost of pay, housing and benefits grew by 5%, while force
Major General Arnold Punaro (Ret) recently pointed out that the fully burdened cost of a mid-career person has ballooned from $80K to $400K per servicemember in the last twenty years.27 Others have stated the Defense budget will need a 3 to 5% real increase (above inflation) annually for the next decade to field systems in the pipeline.28 Given other national priorities, this does not seem likely, and in October 2021, the Congressional Budget Office published an option for a $1 trillion reduction over a decade, resulting in a $600 billion budget in 2031.29

As seen from Figures 6 and 7, the United States is spending more on Defense in constant year dollars, but with a slowly decreasing percentage of GDP. It is time to readaddress what the nation expects of the DoD. If the nation expects a defense against all potential threats, the nation will need to spend appropriately to achieve these goals. The goals must address the overall strategic balance of the defense of the homeland, defense of ideals, and defense of allies.

To compound the challenge, the Department does not have a coherent strategy for cyber, electronic warfare, maneuverable reentry missile defense, information operations defense, etc. The Joint Chiefs of Staff have issued a “Joint Warfighting Concept” for a vision of future combat, with four “strategic directives,” which are: contested logistics, joint fires, joint all domain command and control, and information advantage.

Note that these are not platforms, but rather concepts. The DoD continues investing in platforms based on legacy systems and outdated concepts of warfare without prioritizing for future critical capabilities.
The nation has arrived at the position where the physical systems it is buying may not be affordable, let alone relevant to counter the threats we face. The Defense budget focuses on platforms, but not the “enablers” that will allow the force of the future to fight more effectively. The United States may be living beyond its means in what it spends on defense. Yet defense of the population is one of the primary functions of government.

There are two more fundamental changes that are needed to increase the competitive posture of the US military—both are needed to enhance agility and ability to respond more quickly and adapt systems. The first involves how the DoD buys systems—simply, all systems bought should conform to open systems architecture standards using digital engineering. The model that has served the United States well is being surpassed in commercial practices, which allows for easy upgradability. By adopting open systems, it will be possible to swap a microelectronic board, not a total subsystem. Use of digital engineering will likewise allow rapid adaptation. Both open systems and digital engineering will reduce sustainment costs and enhance downstream capabilities.

The other change is about how the DoD budgets. This change will require Congressional action. Currently, the Department must define how it will spend all its money to Congress, with a budget that is built 18 months or more before the money arrives. There has to be a way, working within the constrict that provides Congress the power of the purse, to allow the Department a sum of funds that can be allocated when needed, not when scheduled.

The Issues Going Forward

Integrating our assessments of the economic and military positions of the United States in today’s competitive environment, we pose a sequence of salient questions:

- What capabilities and systems need to be procured and on what timetables, prioritized according to missions that answer threats of the future as determined by a strategic review?

- How can the nation efficiently procure those capabilities and systems with sufficient agility and responsiveness in a competitive environment?

- What proportion of defense spending should be devoted to R&D? What R&D is needed?

- How do we incentivize allies to assist in common aspects of defense?

The issues reflect certain structural problems in current practices. The last time the DoD executed a joint bottom-up review was in 1993. In any given year, DoD completes 95% of its budget build for a fiscal year that does not start until 15 months later, thwarting agility and responsiveness. The requirements process of the acquisition system needs overhauling. The US should also expand mutual reliance on allies, such as in the NATO alliance.

Answers must happen at the national level. Taken individually, each of these issues is difficult. In the aggregate, they are daunting. However, other nations are also facing significant challenges, and if America begins to address these issues it is likely that the outcome will be one where America and American allies will not be disadvantaged. America has faced difficult positions in the past and has risen to the challenge.

What Needs to be Done

The DoD should conduct a complete bottom-up review of force structure and platforms and capabilities that are needed to meet a prioritized set of missions for a future defense of the nation. This could be done by a bipartisan panel of national security experts who are given a year or less to complete the review. The Marine Corps did this in their 2022 budget request, realigning their budget to the 2018 National Defense Strategy and Great Power Competition—and in so doing, retired several systems (to include all main battle tanks). A joint review, considering expectations of what national security of the future should include, should be convened.
To improve agility and responsiveness, the structure of the Defense budget, and the way the DoD buys systems needs to change. Current budgets are granular and relatively inflexible, overly prescriptive and not flexible enough for the fluid nature of the globally competitive environment. The DoD must be able to adjust funding as opportunities and necessities arise. In addition, the Defense Acquisition process has to adopt both open systems engineering and digital engineering as the foundation for future systems.

On-going reforms that add agility to the acquisitions system must be accelerated. Fixing acquisition starts with overhauling the requirements process, something the Joint Chiefs of Staff are trying to do. The DoD must step up efforts to prototype for production, not just prototype for technology. And finally, the DoD needs to implement both digital engineering and open systems architecture for all acquisitions. The Services are moving in these directions. They need to accelerate.

America must incentivize expansion of Defense spending by our allies and with those who we share similar values to assure our mutual competitive advantage in the future. NATO has been a successful alliance. While recent events have led to an increase in defense spending across NATO, in 2021, greater focus is needed on expanding mutual reliance, incentivizing fielding of capabilities that assure our mutual security and prosperity.

Implications

Some of the steps the nation may need to undertake will not be easy, or easily accepted by the American populace.

First, economically, America must begin to live within its means. Inevitably, this means incremental tax increases coupled with reduced spending. Reducing spending will require some reduction to mandatory spending.

At the same time, overall income inequality must be addressed. If America does not address the growing economic (and hence societal) gap in our nation, America will continue to bicker internally; a nation at war with itself will not be competitive on a global stage.

The nation must have a serious review of expectations regarding national security, and then allocate sufficient resources, both human and monetary. The review should provide a set of realistic options, and the nation will need to develop a consensus to commit to a long-term strategy. A serious bottom-up review of all platforms and capabilities in the acquisition pipeline will result in some systems being canceled.

Finally, the acquisition needs to be more agile, which will require legislative changes, including revising the planning, programming, budgeting, and execution (PPBE) process.

Summary

The recommendations are easy to write down, but difficult to implement. Addressing these problems in earnest will require balancing overall outlays with the goals and means of the nation. If we do not address these challenges, US economic and military posture will erode. The nation is in an economic situation where servicing the debt is exceeding the current budget for the defense, and the ability to borrow may become jeopardized. This supports Paul Kennedy’s thesis that economically, the United States is having a hard time meeting both military and political aspirations, because it is living beyond its means.

Additionally, the nation risks an increased level of social unrest due, in part, to income inequality and an erosion of confidence in the political and economic systems to take care of the American people.

Thus, to remain competitive, America must define the expectations of common defense, and fund that expectation while rebalancing economic priorities, balancing mandatory and discretionary budgets, and addressing the growing inequality in America. Without doing so, the underlying premise of what America stands for will continue to erode, the United States will cease to be a world leader, and will lose its global competitive standing.

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Endnotes


3 The latest OMB Data uses 2012 data for constant year dollars. To convert to 2021 dollars, each figure would need to be multiplied by 1.19.


5 National debt consists of “public debt,” i.e., debts that the US government and state governments owe to the public, and intergovernmental debts. The latter is around $6 trillion by the end of 2021.

6 Data valid as of January 20, 2022.


11 From US Treasury Direct.


13 There are typically 10 or 20% Gini’s, which measures the gap between the 10 and 20% rich and poor, respectively. A Gini index of zero represents complete income equality (everyone makes the same); a Gini of 1 means that one person has all the money in a country.


16 Generally, 14nm is considered SOTA, although with some exotic materials, SOTA exists at 45nm. Currently, the United States has very little SOTA production.

17 Typically, $20 billion or more for SOTA facilities with a four- to five-year lead time.


