# The Political Economy of Rising Defense Costs

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D efense costs in the United States have been on the rise for the past several decades. The price index used to measure defense costs has outpaced inflation in the overall economy (as measured by the GDP deflator) by a factor of 1.3 from 1947 to 2020. This defense price index captures increases in costs incurred by the Department of Defense on a variety of national security outputs and provides a summary measure of how unit costs in defense provision have evolved over time. Despite significant investment in research and development, as well as the outsourcing of production to private firms, the cost of providing for national security has continued to climb. Why is this the case? To answer this question, this paper employs public choice theory to examine the incentives and decision-making processes within the military-industrial complex (MIC) that underlie defense spending. In doing so, it sheds light on the complex factors that contribute to the upward trend in defense costs and provides a framework for understanding how politicians, bureaucrats, and contractors may capture private benefits that ultimately lead to higher costs.

Political institutions create incentives for the individuals that constitute the MIC to protect the benefits that accrue to them through specific defense-spending programs. Politicians can benefit in terms of their reelection chances through their support for military bases and programs. For example, if a politician can protect a military base in her district from spending cuts, she may be more likely to be rewarded at the voting booth. Bureaucrats benefit through the increased use of contracts that require management and oversight, an increase achieved through larger discretionary budgets.

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Furthermore, bureaucrats lack incentives to monitor overcharges on defense contracts or to use solicitation procedures that select on price, both of which can potentially reduce costs. Contractors can benefit from inflated contracts that are often negotiated rather than awarded through a sealed bidding process. Additionally, cost-reimbursement contract structures allow contractors to overcharge on contracts with limited risk. In general, these political actors also do not internalize the costs of government spending. Those seeking to protect a spending program have more to gain than others stand to lose from failing to cut costs. It is this dynamic that contributes to rising costs.

This paper contributes to two literatures, the first of which is the literature on the economics of defense costs. The summary measures provided by the price indexes used in this paper show evidence for rising costs of defense; however, they may understate the magnitude of the cost increase as the GDP deflator includes a weight for government spending. Because the price index for defense costs is constructed relative to the GDP deflator, increases in defense costs are captured in this measure to some extent. Other measures of defense costs, including those specific to aircraft and ships, show upward trends like those observed in the price index data (Arena et al. 2006; Keating and Arena 2016). Similarly, Hove and Lillekvelland (2016) find levels of cost escalation (after adjusting for differences in quality over time) across other military equipment, including submarines, helicopters, frigates, and small arms. My approach focuses on the price index associated with defense costs to show, in general, how real defense costs have been rising. The price index is a broad measure of costs, as it covers many different defense outputs; however, the trends shown provide evidence consistent with rising costs specific to select defense programs and represent a pattern common to defense spending in general.

Other studies of rising defense costs do consider the political influences on rising costs but do not view those influences as the primary drivers (Keating and Arena 2016; Borge et al. 2018). Specifically, Borge and his coauthors have found that, in the case of Norway, the variable that explains most of the variation in the relative cost of defense is manufacturing productivity, providing evidence for a Baumol cost disease effect. However, the only political variables in their empirical specification are political party concentration, ideology, and the ratio of conscripted Norwegian soldiers. Neither of the first two political variables attempts to capture the interactions among contractors, politicians, and bureaucrats and instead attributes all political influence to politicians. Politicians surely have some effect on productivity in the public sector, but there is little reason to believe that this effect would only be positive and would operate solely through changes in bureaucratic behavior. Keating and Arena (2016) come closer to the argument in this paper by arguing that over time the military has demanded more complex technology and that demand is responsible for rising costs. Although this paper does not dispute the claim that the demand for complexity in military technology has increased, simply acknowledging the role of the demand side does not provide an analysis of the incentives underlying it.

The second contribution is to the literature on the political economy of the MIC. Studies of the MIC by both economists and sociologists go back to the Cold War era (Adams 1968; Smith 1977, 1980; Baack and Ray 1985; Brunton 1988). These early works aimed to understand the rise of the MIC in the decades following World War II. Relatedly, research in the public choice tradition has long recognized the influence of political incentives in defense spending (Kovacic 1990a, 1990b; Lee 1990; Lindsay 1990; Mayer 1990; Twight 1990; Carsey and Rundquist 1999; Higgs 2006, 2007; Duncan and Coyne 2013, 2015; Coyne and Hall 2014; Coyne 2015; Coyne et al. 2016). For example, Coyne (2015) lays out several criticisms of the common view among social scientists to characterize the defense establishment as a singular entity rather than a collection of individual decision-makers acting in their self-interest. Higgs (2007) discusses the mutually corrupting effects that private firms and government agents have on each other in the context of defense spending. Duncan and Coyne (2013) also examine the costs of large-scale defense spending, making the argument that these costs are largely understated as they do not account for the opportunity costs of resources reallocated from the private market to defense purposes. My analysis suggests that the incentives of actors involved in defense spending such as contractors, bureaucrats, and politicians encourage behavior that increases costs by maintaining expenditures in areas that provide little value, protecting budgets through discretionary programs, and encouraging rent seeking. This paper contributes to the literature by specifically examining the incentives within the MIC that contribute to the rising observable costs in defense spending over the past several decades.

The next section of this paper presents the empirical evidence for rising defense costs. Using the price index for defense spending from the U.S. national income and product accounts and the GDP deflator, I show that the relative price level of defense has been rising. Then I provide an analysis of the MIC, discussing the incentives that individuals face in this setting and showing how those incentives lead to rising defense costs. I provide evidence for the theoretical implications by drawing from historical and contemporary case studies as well as defense contract data from 2001 to 2020. The final section draws conclusions about the political economy of rising defense costs.

#### Rising Defense Costs, 1947–2020

The rising costs in defense spending can first be shown using the price index of federal government consumption and gross investment for defense expenditures. For comparison, the price index of federal government consumption and gross investment for nondefense expenditures and prices in the overall economy as measured by the GDP deflator will also be shown. Both price indexes of government output come from the national income and product account tables produced by the Bureau of Economic Analysis (BEA). Government consumption as defined by the BEA is "spending by

government to produce and provide services to the public such as national defense and public school education." Gross investment as defined by the BEA is "spending by government for fixed assets that directly benefit the public, such as highway construction, or that assist government agencies in their production activities, such as purchases of military hardware" (Fox et al. 2020, 9–1).

The definitions of government consumption and gross investment apply in general, but before presenting the data I want to further specify what the defense price index is measuring. The price index for defense consumption and the index for gross investment expenditures are prepared "based on DOD delivery and price information" (9–15). That is, the price index reflects the costs incurred by the Department of Defense (DOD) for its purchase of a variety of outputs of national defense production, including wages and salaries of DOD employees (both military and civilian), durable goods, services, military facilities, aircraft, missiles, ships, electronics, and other equipment (9–17). The cost data are then used to construct a chain-type price index that is used here as a summary measure of defense costs over time. The index is intended to be a measure of the "unit cost" of defense according to the defined basket of defense goods and services.

Figure 1 shows each series beginning in 1947 as an annual average index value through 2020, set to 100 in 1947. The measure of overall prices in the economy used is the GDP deflator and covers the years also covered by the two government price indexes, 1947–2020. The GDP deflator does include some weight for government consumption and gross investment but is a more relevant measure for my purposes than other measures such as the consumer price index (CPI). There are two reasons for this. First, the GDP deflator is the price index used by DOD budget analysts in determining real changes in spending over time (Horowitz et al. 2016). Second, the GDP deflator is a more comprehensive measure of price evolution in the overall economy as it includes weight for investment goods rather than consumer goods alone, as is the case for the CPI.

All price indexes in figure 1 show a consistent upward trend; however, the two indexes for government prices are noticeably higher in both level and slope, indicating that prices for these sectors are increasing at a higher rate than in the overall economy. After 1980, the price index for defense remains at or above the level of the price index for nondefense government spending. That pattern suggests that, using these measures, defense prices grow more rapidly than nondefense prices at the federal level. As can be observed in figure 1, the price levels of both nondefense government spending have been rising considerably from 1947 on, above that of price level increases for the overall economy as represented by the GDP deflator. The trend seen in figure 1 is further confirmed when these indexes are converted to relative price indexes, as shown in figure 2. These are simply constructed as the ratio between two price indexes (Getzner 2002; Borge et al. 2018).



Figure 2 also shows that there is a general upward trend in defense costs relative to prices in the overall economy.<sup>1</sup> The evolution of this relative price index represents how defense costs have risen over and above inflation in the overall economy. Although there are periods of decline in the index, the annual percentage change in the index is positive in forty-two years over the seventy-four-year period. It is worth highlighting that some of the most rapid increases in defense costs relative to inflation occurred during the Vietnam War and the first decade of the war on terror. From 1955 to 1975, the index increased by over 20 percent, and between 2001 and 2010, it increased by nearly 9 percent.

<sup>1.</sup> I conduct two statistical tests to further analyze the evidence for rising costs specifically on the series of defense relative to the GDP deflator. The first is a modified Dickey-Fuller (DF) test using a single lag and no trend term (Schwarz 1978; Dickey and Fuller 1979; MacKinnon 1994). Lag length was determined using the Schwarz criterion with 1 lag being common across all DF tests. Lag length of 1 was also common across two out of four DF tests according to the modified Akaike information criterion (Ng and Perron 1995). The null hypothesis of this test is nonstationarity, and therefore if the null fails to be rejected, there is evidence for nonstationarity. The second test is a Kwiatowski-Phillips-Schmidt-Shin (KPSS) test, with the number of lags set at 3 as suggested by the Schwert criterion (Schwert 1989; Kwiatkowski et al. 1992). The null hypothesis for the KPSS test is that the series is statistic of 1.56; the null hypothesis fails to be rejected. The KPSS test produces a test statistic of 1.56; the null hypothesis is rejected at the 1 percent level. The combination of results from both tests is strong evidence in favor of the rising price of defense relative to the overall economy.



Although these two wars do not represent the only years in which there was substantial defense buildup in the U.S., they exemplify times when the public choice issues that will be discussed in the following sections are exacerbated. The political incentives underlying rising defense costs in general become more apparent during wars as the government responds to the crisis. This dynamic is related to Higgs's (1987) hypothesis of the growth in the scale and scope of government. The "ratchet effect" posed by Higgs posits that crises such as wars present opportunities for government growth that persist long after a crisis subsides. As the government grows during a crisis like the Vietnam War or the war on terror, opportunities are created for political actors to take advantage of political pressure to increase defense spending (Higgs 2006, 124–51). Political actors face strong incentives to protect benefits associated with specific areas of defense spending, placing upward pressure on defense costs. This implies that the government provision of a "unit" of national defense tends to become increasingly more expensive during the crisis period.

However, this argument should not be taken as implying that wars will always lead to rising defense costs. During the Korean War, for instance, the defense costs relative to inflation fell by almost 6 percent. There are certainly other macroeconomic and political factors that may influence the changes in defense costs. A full accounting of these factors and their influence on the timing of changes in defense costs is beyond the scope of this paper. The sections that follow will explain the general upward trend in defense costs relative to inflation in the overall economy, with a focus on the institutional context of defense spending.

#### The Institutions and Incentives of the MIC

The existence of the military-industrial complex (MIC) is traced back to the end of the nineteenth century during the buildup of the U.S. Navy after the Civil War (Kovacic 1990a). The term itself is attributed to President Eisenhower's 1961 farewell address and has since then been used by social scientists and political commentators (Coyne and Goodman 2022). Although there have been many definitions of the MIC used by scholars, the term will be used here to describe *the institutions and incentives associated with defense spending and their effects on the behavior of individuals in each arm of the complex.* The MIC is also sometimes referred to as the "military-industrial-congressional complex" (Higgs 2007) or the "iron triangle" (Adams 1981). Conceptually, these terms are interchangeable; however, *the MIC* will be used throughout the rest of the paper.

#### Congress in the MIC

Politicians' behavior is influenced by their desired ends: they include securing reelection, income, and power and achieving certain observable programmatic outputs (Niskanen 1971; Cohen and Noll 1986; Coyne 2015). When making decisions related to defense spending, there will be a tendency to select for areas of defense spending that are likely to both have visible results in the short term and be relevant to politically popular issues of the time (Kovacic 1990b, 111). The focus of politicians will be on whether defense spending can generate a sufficient level of political support, not necessarily on whether it is cost effective (Banks et al. 1991, 53). Distributional benefits can be achieved through legislation such as amendments to appropriations bills as well as through the informal power to select specific contractors for contracts being solicited through the Department of Defense (Lichtenberg 1990; Kambrod 2007). Membership on committees relevant to defense spending and voting records on the bills that those committees bring forth operate as inputs for legislators to appease their constituents and private interests in their pursuit of reelection.

One could argue that if the voting public did not demand the level of defense provided by the government, then, given its increasing costs, we would observe a shift in political popularity and politicians would vote differently, but this misses a broader point. If the costs of defense are rising, individual voters internalize only a small portion of that cost and so face little incentive to change their voting behavior. Furthermore, some voters—including in some cases, entire constituencies—will benefit directly from rising defense costs more than those increases will cost them in terms of taxes. To the extent that voters do have influence over defense policy, it will tend to take form in organized interest groups or broad changes in public opinion that are not independent of the actions of policymakers (Higgs 2006, 203). If the interests of a politician's constituents do not align with the goals of improving productivity, the incentives for that politician to go against her constituents are weak. Instead, it is in that politician's interest to protect or enhance the benefits flowing to her constituents, contributing to rising costs (Coyne et al. 2016).

Carsey and Rundquist (1999) show that membership on defense committees in the House is driven by constituent interest and that the constituents subsequently receive the benefits made possible by that committee membership. As will be discussed in more detail below, the distribution of benefits is facilitated, in part, by lobbyists for defense contractors who meet with committee members throughout the budget process to try to have their desired programs funded (Kambrod 2007). Lindsay (1990) argues that parochialism in defense policy is most apparent in legislation concerning funding for military bases, an area of spending that confers substantial benefits to constituents, rather than spending on weapons systems, for example. The political struggles over military bases serve as an illustrative example of politicians' actions contributing to higher defense costs.

During the 1960s the DOD attempted to close several domestic military bases that were deemed unnecessary to the military's mission so that spending could be reoriented. Politicians in Congress resisted the closures to protect their constituents' interests related to the existence of these bases, as described by Twight:

In May 1965 the House Armed Services Committee amended the military construction authorization bill to give the House and Senate armed services committees power to block base closures proposed by the DOD. The original House bill would have given the committees a thirty-day review period during which either committee could introduce a resolution rejecting a proposed base closure. If such a resolution were introduced, the bill provided an additional forty days during which the full house whose committee had acted could approve of the resolution. If such approval were forthcoming—in effect a one-house veto—the closure could not be implemented. (1990, 242)

Later, in the 1970s and 1980s there was further resistance in Congress to base closures, including an amendment to the 1978 Military Construction Authorization Act that gave Congress the power to "throttle all DOD attempts to close or realign major military bases" (245). These powers resulted in no new base closures from early 1979 to 1985 (246).

More recent instances of base closures, starting in 1988, have been handled through what is called the Base Realignment and Closure (BRAC) process. The BRAC process is intended to limit the influence of politicians by relying on predefined criteria for closure, by granting an independent commission the authority to review candidates for closure or realignment, and by giving politicians the option to either accept or reject the list of candidates in full (Congressional Research Service 2019, 2–3). However, in the most recent round of the BRAC process in 2005, the selection criteria as defined by Congress emphasized military value over cost savings (3). "Military value" is arbitrarily defined and creates room for politicians to justify resistance to base closures in cases where costs are high.

Politicians also have influence over the selection of those making up the commission that reviews DOD recommendations for closure or realignment (Lockwood 2005, 14–16). Although the structure of the BRAC process was intended to increase military effectiveness and cost savings, once implementation was completed in 2011, 41 percent of the recommendations that had been approved were estimated to have negative twenty-year net present values (Government Accountability Office 2012, 5). Despite the stated purpose of BRAC to limit political considerations in closing military bases, politicians have clearly been effective in preventing closures. Only 350 military bases and installations have been closed since the first round of BRAC in 1988 (representing around 8 percent of the total number of bases and installations in 2018), and DOD requests for additional rounds have been resisted in Congress (Department of Defense 2018; Touchton and Ashley 2019, 25–27). For instance, amendments to the National Defense Authorization Act in 2014 pushed for no new BRAC rounds until the DOD considered closing foreign bases first (Touchton and Ashley 2019, 28).

The continuous attempts of politicians to resist military base closures is relevant to the focus on rising "unit costs" for the following reasons. Assume for the moment that bureaucrats have the information necessary to determine which bases are most strategically useful and are correct in their evaluation that the selected bases to be closed are of little value to the military. By pushing to keep those bases in operation, politicians are ensuring, at the very least, that the government is producing less defense for the same cost such that cost per unit of output is rising. More realistically, costs will be rising because wages rise over time and labor is used to maintain the base. In this case, output falls since maintained bases provide little military value, and costs are rising. The incentives to protect constituent interests have a direct effect on rising costs for defense. The magnitude of this effect is uncertain, though plausibly large. In recent years, DOD spending on military bases has constituted nearly a quarter of all federal discretionary spending (Touchton and Ashley 2019, 1-2). Maintaining unneeded military bases keeps that level of spending high while providing little in terms of national security.

Political incentives to protect or create benefits flowing to their constituents from the existence of military bases are not limited to keeping bases in operation. Politicians can also find ways to benefit specific industries in their districts—for example, by redirecting spending on the supply of energy on military bases. Higgs (2006) details the near twenty-year saga of members of Congress using their legislative power to force the DOD to purchase large quantities of anthracite coal to fuel heating on U.S. bases in Germany. Starting in the 1960s the Pennsylvania anthracite

coal industry suffered a considerable decline. U.S. Rep. Daniel Flood worked to revitalize the industry by committing the army to purchasing coal from the region to be shipped to U.S. military bases in Europe.

The anthracite coal was known to be much more expensive than fuel alternatives such as oil (Higgs 2006, 161). Despite this, the program was maintained up until the 1980s, when the German government began to complain of the pollution coming from U.S. military bases. In response, Rep. Joseph McDade included in the defense appropriations legislation requirements to continue the purchase of coal for strategic reserve purposes. When the necessity of a reserve was eventually challenged as well, the congressman successfully lobbied to have the coal used on domestic military bases.

The political interference in the operation of military bases is just one example of how politicians' actions contribute to rising defense costs. Military bases are an example of spending where the benefits to constituents are highly visible and can be easily quantified in terms of the jobs created or maintained, which in part explains why there is such significant political resistance. Although some research has shown that politicians have less influence in other areas of defense, the same perverse incentives sometimes operate with respect to programs such as tank production facilities or the notorious F-35 fighter jet program, the production of which involves forty-five states (Duncan and Coyne 2015, 401; Coyne et al. 2016, 230). However, the military base example illustrates that political strength does not only operate to improve the efficiency of the bureaucracy and reap positive effects on productivity.

#### Department of Defense in the MIC

Self-interested bureaucrats seek to maximize their budgets when elected officials demand their agency's services (Niskanen 1971). Increases in demand from politicians will stimulate increases in budgets, but bureaucrats can also work to stimulate demand for agency services. The previous section discussed how DOD bureaucrats' attempts to close bases was met by resistance from politicians. It is not the case that bureaucratic incentives always and everywhere point in the direction of cost increases. But there are specific areas in which bureaucrats have clear incentives that contribute to rising costs. This section will make clear where and how bureaucratic incentives contribute to rising costs as well.

The DOD can be viewed as a collection of agencies that includes the military services (e.g., navy, army, air force) and the civilian side of the bureaucracy (e.g., Defense Contract Management Agency, Office of Economic Adjustment). The various agencies on both sides compete over portions of the total defense budget that is authorized by politicians. Most of the defense budget tends to be appropriated to the military services, which is reflected in the level of obligations for procurement contracts, shown in figure 3.



other DOD agencies. Obligations are those dollars promised to be spent when a contract is awarded. Actual outlays may occur during the fiscal year a contract is awarded or at a future date.

Source: USAspending.gov; author's calculations.

Procurement obligations among the military services as shown in figure 3 encompass a variety of defense programs that include weapons systems, R&D, and maintenance on military vehicles, among many other areas. The military services have an interest in continuing spending in those areas because of the private benefits associated with the program's existence as well as the strategic military value. Though each of the military services has its distinct mission area, there will be significant overlap as the services compete with each other.

The military services are examples of both functional and allocational rivals due to this overlap (Downs 1967, 10). As functional rivals, bureaucrats within the military services are in competition over their mission areas and budgetary resources. As allocational rivals, the leaders of the navy will not willingly give up their responsibilities (or funding) to the army merely because they are both part of the DOD, for example. Internal competition over the defense budget is a source of incentives to protect spending areas that are service specific, which contributes to higher costs and influences future appropriations defined by the need to fund existing projects using historical costs. For example, when laser technology was discovered in 1961 by a military contractor, the military services saw potential for a wide range of applications (Seidel 1987, 111). By 1962 the DOD was spending over \$5 million on fifty programs dedicated to laser research (113). The air force, navy, and army all began conducting research into military applications of lasers throughout the 1960s and into the next decade. Competition in this area resulted in R&D spending on solid-state laser technology, which, as was already known at the time, "would cost as much as the Nike Zeus or other [antiballistic missile] systems, and yet would only supplement them, because unlike them it could only be used in fair weather" (123). Despite the knowledge of a costly technology that would do little to improve military capabilities, the army and the air force both continued their management of major R&D programs into solid-state laser technology at the exclusion of other laser technology candidates (123). Even outside of considerations of competition among the military services, similar dynamics are found in acquisition and procurement in general.

Acquisition and procurement are regulated both by federal regulations determined by the legislature and by internal regulations that agencies within the DOD determine. The regulations internal to the DOD govern the management of defense contracts as well as the detection of fraud. Two agencies within the DOD, the Defense Contract Management Agency (DCMA) and the Defense Contract Audit Agency (DCAA), are tasked with "performing all necessary contract audits" and "providing accounting and financial advisory services to all DOD components responsible for contract procurement and administration" (Heinz 2017, 177). Given that much of the monitoring for contractor fraud is delegated to the DOD itself rather than Congress, we can expect that monitoring activity will be biased toward the interests of the bureaucrats.

Bureaucrats, being primarily concerned with their budgets, will avoid bringing to light instances of fraud and waste that could negatively impact future appropriations. Fraud and waste tend to reduce political support as they can undermine trust in institutions (Hetherington 1998). Even under the assumption that these agencies have strong incentives to detect fraud, the number of contracts that need to be overseen suggests that only a small fraction of fraud can be detected. For example, during the military interventions in Iraq and Afghanistan over the past two decades, the DCAA experienced a backlog of unaudited contracts totaling over \$550 billion (Coyne et al. 2016, 233).

Unlike their market counterparts (e.g., firm managers), bureaucrats do not have a claim to the value generated by their respective organizations. As a result, the incentives to minimize costs are weak. The military services have considerable discretion over how their budgets are allocated and rely on the private sector for much of their production through acquisition and procurement. Stowsky (2004) describes in detail three examples of DOD investments that show how weak cost-minimization incentives impact procurement and acquisition. First is the air force's use of numerically controlled machine tools. In acquiring these tools, the air force "demanded that its suppliers use its preferred programming language, APT, and awarded them exclusive access and proprietary rights to further advances" (Stowsky 2004, 261). The APT programming language, though preferred by the air force, was viewed by industrial users as unnecessarily complex and expensive relative to alternatives, "requiring highly skilled programmers, . . . demanding the largest available computers to handle the greater quantities of fundamental information, and containing a greater chance of error" (Noble 2011, 143). These demands raised the costs of using technology that was found to be cheaply produced in mass markets by Japanese and German suppliers.

Second, in the late 1970s the DOD invested \$1 billion in the development and production of "very high speed integrated circuits" (VHSIC). The development process was kept secret and aimed specifically at defense applications. This too clearly led to unnecessarily high costs as "commercial firms were already marketing smaller, faster chips, and none of the new NHSIC circuits [*sic*] had made their way into a fielded weapons system" (Stowsky 2004, 261).

Lastly is DARPA's Strategic Computing Program. Despite the development of highly sophisticated technology to aid the automation of military vehicles, the project was ultimately another \$1 billion spent with no clear value added to national defense.

When it is unclear exactly what the DOD wants or expects from private contractors, such as in R&D or some services, it is in the interest of bureaucrats to use cost-reimbursement contracts. These sorts of contracts are also used in the private sector; however, because bureaucrats do not internalize their costs, they will be more likely to use such contracts than would a firm manager in the private sector. Cost-reimbursement contracts leave most of the risk of cost overruns on the government by disincentivizing contractors to minimize costs. Initial obligations on these types of contracts will tend to understate the level of spending that occurs by the end of performance (Rogerson 1994). By awarding cost-reimbursement contracts, bureaucrats are not increasing costs for the sake of increasing costs. The flexibility of cost-reimbursement contracts allows bureaucrats to deal with unanticipated changes in demand for weapons (67). Regardless of the desirable features for bureaucrats, strong incentives to use cost-reimbursement contracts are another reason why costs can be expected to rise. Obligations for cost-reimbursement contracts do not constitute most DOD spending allocated via contracts; however, from 2001 to 2020 the DOD has obligated on average \$95.7 billion per year using cost-reimbursement style contracts.<sup>2</sup>

The lack of bureaucratic incentives to control costs further implies that we should expect to see procurement practices that allow contractors to increase costs for their

<sup>2.</sup> Figure calculated using data on prime DOD contracts from USAspending.gov.

benefit. The benefit to contractors from cost overruns is discussed in detail below, but bureaucrats can also benefit. Cost overruns can translate to longer periods of development and production such that contracts must be renegotiated and continued over longer periods of time, potentially increasing the size of programs the bureau oversees (Williamson 1967, 227). The more restrictive and concrete the defense contracts are, the more difficult it becomes to attract sufficiently capable producers to compete over these contracts (Rogerson 1994; Stowsky 2004). Because of this, bureaucrats have an incentive to not require cost and price data when awarding contracts.

From 2001 to 2020 over 90 percent of all prime contract transactions had either waived or simply did not require cost or price data from contractors.<sup>3</sup> This problem is not new. A government investigation in 1990 found that the DOD was not requiring contractors to report cost or price data, resulting in extensive overcharging (Watkins 1991). Absent the reporting requirement, contractors have more opportunities to misrepresent current cost estimates to either increase their chances of winning a contract or to inflate costs that will be reimbursed by the DOD. Similarly, bureaucrats also tend to rely on negotiated proposals rather than sealed bids to award contracts. Weak requirements to report cost and price data—in combination with competition that does not select on price alone—leaves an opportunity for the DOD to select politically preferred contractors even if the costs are higher (Higgs 2007).

#### Defense Contractors in the MIC

Private contractors, in large part, are used by the DOD to supply everything from food on military bases to the development and eventual production of major weapon systems (Coyne and Hall 2019). Private firms will have an obvious interest in defense spending, as revenues from defense contracts can constitute a significant portion of their total revenue. Table 1 shows data on DOD contract obligations made to the top five defense contractors and their share of total DOD contract obligations in fiscal year 2020. These data represent the promises of spending made by the DOD to each defense contractor. Total DOD contract obligations in fiscal year 2020 were \$714 billion, and the top five defense contractors shown account for over 20 percent of that total. Defense contractors stand to gain substantial sums of money, and their incentives will depend not only on the profit opportunities that contract awards represent, but also on the solicitation procedures and structure of the contracts awarded by the DOD.

<sup>3.</sup> Figure calculated using data on prime DOD contracts from USAspending.gov.

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Contractor	DOD Obligations (in Billions)	Share of Total DOD Obligations
1. Lockheed Martin Corp.	\$74.2	10.4%
2. Raytheon Co.	\$27.4	3.8%
3. General Dynamics Corp.	\$22.6	3.2%
4. Boeing Co.	\$21.5	3.0%
5. Northrop Grumman Corp.	\$12.7	1.8%

Table 1 Top Five Defense Contractors Ranked by FY 2020 Department of Defense Contract Obligations

*Note:* Total DOD contract obligations of \$714 billion were used to calculate shares in the second column.

*Source*: Bloomberg. 2020. The 9th Annual BGOV200: Federal Industry Leaders in 2020. https://about.bgov.com/reports/bgov-200-federal-industry-leaders-2020/. Accessed September 5, 2023.

Prior to a contract being awarded, the DOD will solicit work on a weapons program or for other goods and services using a variety of methods. Federal regulations require that in most circumstances contracts be awarded under "full and open competition," but solicitation procedures such as negotiated proposals can be used to avoid competition on price alone. The DOD can instead opt to base a selection on a bundle of characteristics including reputation, technical capabilities, and size (Higgs 2007, 308). Even when competitive solicitation is used, some contractors have been found to fraudulently use companies that they do not appear to own but actually do (Government Accountability Office 2019). This strategy allows contractors to subvert the competitive process and allow for inflated prices on awarded contracts.

Over the last two decades, obligations awarded by the DOD on noncompetitively awarded contracts have made up a substantial portion of all obligations. This can be seen in figure 4, which shows total obligations for contracts awarded competitively and noncompetitively from 2001 to 2020. Competitive contracts do of course make up most obligations, given the regulatory requirements; however, since around 2014 there has been a rapid increase in noncompetitive contract awards. The final year of obligations data in figure 4 shows that noncompetitive contracts make up over \$203 billion, only \$5 billion less than the competitive contracts. Noncompetitive contracts are those in which sealed bids are not the primary mode of solicitation. Instead, the DOD negotiates with specific contractors.

Negotiated proposal solicitation procedures incentivize contractors to overpromise on performance to renegotiate better fees and cost schedules during performance. Negotiations also create room for contractors who can leverage their political connections and compete on characteristics other than the efficient delivery of goods or on services demanded by the DOD. Because the DOD in part relies on the



*Note:* The dashed line represents obligations for competitive contracts, which are those where any competition was permitted in solicitation of the contract (e.g., full and open competition or competition after exclusion). The solid line represents obligations for noncompetitive contracts, which are those where competitive bids were not solicited.

Source: USAspending.gov; author's calculations.

reputation or "competence" of firms that have experience working in defense, this bias toward politically favored contractors creates barriers to entry in procurement and limits competitive pressures (Duncan and Coyne 2013). Limited competitive pressures weaken the discipline a defense contractor must have to minimize costs. That is, even before the contract is awarded, the structure of procurement in defense creates conditions for high costs.

Some evidence for weak cost-minimization incentives as a result of noncompetitive solicitation is found when comparing average contract costs. Using the same contract data from figure 4, the average contract cost can be calculated for competitively awarded and noncompetitively awarded contracts. From 2001 to 2020, the average obligation for competitive contracts was around \$107,000 while the average obligation for noncompetitive contracts was nearly four times as much, at \$414,000. There are of course differences between these contracts other than competitive or noncompetitive solicitation; however, the difference in average obligation is large and probably partially explained by the fact that noncompetitively awarded contracts create much weaker incentives for defense contractors to cost-minimize. In addition to how contracts are awarded, the way contracts are structured can also disincentivize cost minimization. Contract structures such as cost reimbursements incentivize cost overruns on the part of the contractor, as the risk of inflated costs falls on the government. For contractors, cost-reimbursement contracts can also serve to finance investments that will strengthen their capabilities, increasing future defense contract prospects (Williamson 1967, 225). Similar to the differences in average obligations across contracts for solicitation, there is a clear substantial difference in average obligation between fixed-price contracts and cost-reimbursement contracts. From 2001 to 2020, the average obligation on fixed-price contracts was \$111,000, and the average obligation on cost-reimbursement contracts applies here, but again weak costminimization incentives probably explain some of the difference in average obligation observed. Weak cost-minimization incentives enhance contractors' ability to inflate costs. Since the federal government began relying on private contractors to carry out defense production, there has been some concern that contractors are overcharging the government and making excess profits (Kovacic 1990b, 107).

Recently in 2019, the contractor TransDigm Group was involved in a scandal involving a pin that was charged at a 9,400 percent markup (Tiefer 2019). Other defense contractors, including some of the largest in the country, such as Lockheed Martin, have been part of similar scandals that have drawn public outrage and federal investigations (Department of Justice 2012). The ability of contractors to subcontract out work increases the potential for inflated charges while providing little value in terms of goods or services (Government Accountability Office 2008). Despite these scandals, little effort has been made to systematically address the ability of contractors to inflate costs. Defense contractors do not act completely independent of the other arms of the MIC either. Special interests make investments in lobbying to both persuade members of Congress to fight for spending programs and to encourage the DOD to invest in new military technologies.

Kambrod's *Lobbying for Defense* provides a detailed overview of how lobbyists work to secure funding for defense contractors. The military services are constantly in a process of determining and approving new capabilities that serve as the basis for the DOD's portion of the president's budget that is sent to Congress (Kambrod 2007, 3–12). These capabilities, also known as "requirements," fall into one of two categories: funded and unfunded. Unfunded requirements can be seen as profit opportunities for defense contractors, whose lobbyists will work with one of the military services and politicians to have a specific unfunded requirement included in the final budget. If the lobbyist is successful, the requirement is funded, and the contractors can expect to receive the money once it is released by the military service through a contract award (110–12). It is those profit opportunities that create the incentives for defense contractors to make various investments to increase their chances of securing funding.

The most obvious investment is in the lobbyist who will represent a contractor. The process of finding an effective lobbyist is costly, as the contractor must carefully search for a lobbyist who has detailed knowledge of the political process and the relationships to compete for the attention of military officials and politicians relevant to the contractor's project (123–24). Once a lobbyist is found, the contractor must pay them to meet with politicians and military officials to provide them with information about what the contractor is interested in being funded. Matthew Kambrod notes that, beyond these meetings, there may also be opportunities to host politicians at the contractor's place of business, participate in or host political fundraising events, and make contributions to a politician's campaign fund. All these efforts are characteristic of the unproductive entrepreneurship that Coyne et al. (2016) argue is a persistent feature in military contracting. That is, contractors and lobbyists capture profit opportunities not by demonstrating their ability to offer goods and services at the lowest cost, but by successfully navigating the complicated political process.

Entrepreneurship among defense contractors contributes to the development of increasingly sophisticated military technology. As Keating and Arena (2016) note, increasing demand for advanced military technology is among the factors contributing to rising costs in the defense programs they studied. The increase in demand does not arise merely as a result of increased threats faced by the United States. This is not to say that there is no legitimate national security reason to enhance military capabilities. Enhanced military capabilities achieved through technological advancements may make soldiers safer or more effective on the battlefield. But defense contractors have a strong interest in stimulating demand for new technologies regardless of these effects, as greater demand can result in the awarding of contracts to develop and produce new planes, weapons, or other military equipment. The incentives to enhance military technology are driven by the profits that defense contractors can capture through contracts awarded for the development, production, and maintenance of more complex technology even as costs rise and defense capabilities see little improvement.

An illustrative example of this is the Freedom-class warships. These ships were supposed to be state of the art in meeting military demands in a changing conflict environment (Lipton 2023). However, once the ships were produced, they clearly had various technical issues that would cost millions to adequately deal with on an ongoing basis. These issues included engine failure and an inability to properly use the sonar detection system the ships are outfitted with, due to the noise of the engine. Navy admirals sought to discontinue use of the ships by retiring the ones in their fleet. But the maintenance of these warships, while costly, presented an opportunity for jobs in the districts of some members of Congress. Those politicians introduced amendments into the defense spending authorization bill to protect the ships from retirement, ensuring the continuation of maintenance jobs.

Special interests such as trade associations and the contractors who built the ships also lobbied to continue the use of Freedom-class ships. These interest groups were awarded contracts worth millions of dollars to perform maintenance on the ships, and they made significant efforts to convince politicians that their members would face harm if the ships were retired. Defense contractors such as BAE Systems and Lockheed Martin engaged in lobbying efforts as they stood to gain from the continued sale of parts for these ships as well as from the potential to build additional ships under future contracts (Lipton 2023). Despite the apparent enhanced technology of the Freedom-class, actual gains in quality to the benefit of the military are lacking.

#### Conclusion

I have shown evidence for rising defense costs in the United States. However, as pointed out by Duncan and Coyne (2013), while defense budgets and the costs as measured by price indexes shown in this paper can capture some of the evolution of defense costs, they do not capture the full economic costs. We do not have a way to measure the opportunity cost of the resources allocated to defense and likely underestimate the extent to which costs have been rising because the value of those resources cannot be accurately accounted for absent market mechanisms. Despite this limitation, it is possible to understand the underlying reasons for the rising costs that are observed. I offer an explanation that relies on considering the political incentives faced by those who constitute the military-industrial complex. This explanation relates to how the demand for military technology and productivity in the defense sector affects rising costs which can be summarized in the following points.

First, private interests play a significant role in the drive for more—and more highly sophisticated—military technology. Many contractors rely on government contracts to stay in business and employ thousands of people that are the constituents of politicians, making it politically difficult to let these firms fail. Although competitive procurement is supposed to improve production efficiency, for the reasons discussed here it can also contribute to rising costs.

Second, competition among the DOD subagencies incentivizes spending in areas that will secure future appropriations. The more capable one of the military services becomes, the more the other services are incentivized to do the same or risk diminishing their status among the services. As Keating and Arena (2016) have found, sophisticated technology for military purposes tends to cost much more, driving up overall costs. However, the military does not merely demand more complex and technically sophisticated weapons because they provide better defense. It also does so because it risks losing funding if it concedes that its goals can be met with existing or less sophisticated technology. That behavior would come at the cost of bureaucrats who benefit from large discretionary budgets and the contractors who profit from defense contracts.

Lastly, though politicians have little sway over the day-to-day contract awards, they too have an interest in maintaining military bases and other defense spending programs to protect the streams of benefits being conferred to constituents; these benefits also contribute to rising costs. This set of incentives is not unique to defense spending. However, contrary to the argument posed by Borge et al. (2018)—that politicians primarily act to enhance bureaucratic activity and make it more productive—the examples analyzed in this paper suggest that politicians have little to gain from making the bureaucracy more productive.

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