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Cold War Lessons for Estimating the Chinese Defense Budget

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KEY TAKEAWAYS

Accurate, data-informed estimates of the size and composition of the Chinese defense budget are critical to the assessment of the U.S. defense budget.

The U.S. government should publish its defense analysis estimates to inform the public debate around defense spending.

Lessons drawn from the Cold War deliberations over the true nature of the Soviet defense budget can inform today's debate over the Chinese defense budget.

Ongoing attempts to estimate the defense budget of the People's Republic of China and compare it with the defense budget of the United States closely mirror similar debates surrounding comparisons of the defense budgets of the Soviet Union and United States during the Cold War. Some such estimates relied on Soviet self-reporting and concluded that the Soviet defense budget was dwarfed by that of the United States. These numbers were often cited by advocates of a reduced U.S. defense budget. Other estimates used purchasing power parity (PPP) calculations and attempted to account for the differences in the Soviet and American economic systems and governments to compare the Soviet budget to that of the United States; these produced far higher estimates of Soviet expenditures.[1]

Simply converting military expenditures to a common currency (usually the U.S. dollar) and comparing them fails to account for the much cheaper cost of goods and services in countries such as the Soviet Union and the People's Republic of China, fails to account for the inherent differences in a command economy or a mixed economy, and gives a distorted sense of comparative military investment.[23] Lawmakers often compare the U.S. defense budget to strategic competitors to argue for increased or reduced defense spending. Understanding the nuances of how these estimates are reached and how the comparisons have been used in the past can give lawmakers and policy proponents a better idea of how much the United States is really investing in defense in comparison to China.

If policymakers want a data-informed official estimate of the true size of the Chinese defense budget, the U.S. government must re-establish the economic analysis offices at the Department of Defense and in the Intelligence Community that did this work on the Soviet defense budget during the Cold War. While difficult, this is not the first time American analysts have been tasked with providing defense budget estimates for a country with opaque defense spending figures and a different economic system from the U.S.—and the experiences of American analysts working to estimate the Soviet defense budget during the Cold War can provide critically important context to American analysts attempting to do the same with China today. Just as importantly, publishing these estimates for public consumption informs the debate around the size and composition of the U.S. defense budget in comparison to that of the America's main strategic competitor.

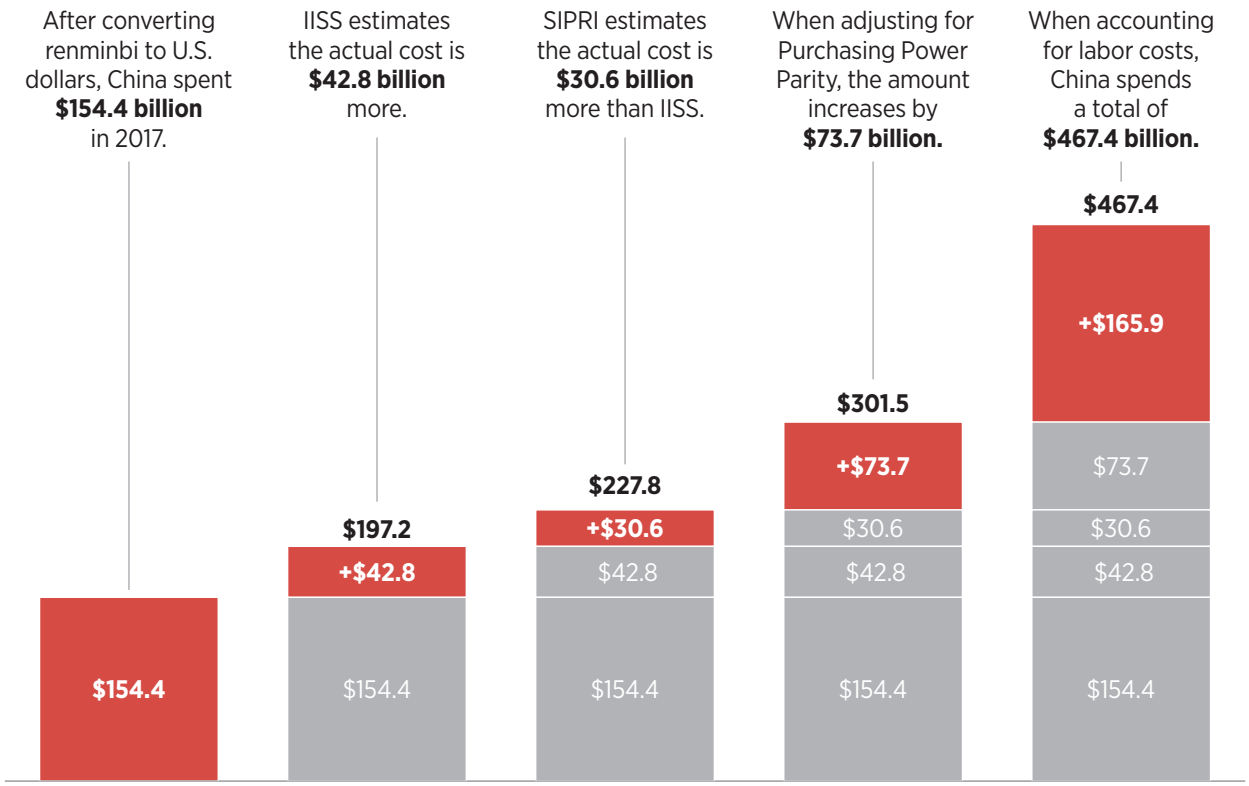
Military Spending Comparisons

When analysts are tasked with comparing two military defense budgets, a number of factors must be taken into account, including:

- Purchasing power,
- State involvement in industry,
- Personnel costs,
- Structure and quality of military forces, and
- Data transparency.[4]

CHART 1

How Much Does China Really Spend on Its Military?



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In short, procurement and personnel costs vary across economies. Different types of economies (i.e., capitalist vs. Marxist) leverage the private sector in different ways, militaries vary in structure and quality, and not all governments publish data accurately reflecting their spending. That

said, the ability to compare military budgets, especially between strategic competitors, is important both to American military and intelligence analysts, as well as to decision-makers responding to the domestic political and economic environment.[5] If the argument for cutting U.S. defense spending rests on the oft-repeated assertion that the U.S. spends more on its military than the next 10 countries combined,[6] it is easy to imagine why one might think the U.S. can continue to compete strategically with, say, China, even while cutting or freezing the current defense budget and maintaining commitments at the same level elsewhere. This same argument was made during the Cold War, especially in the context of arms races between the United States and Soviet Union.

The comparison between the U.S. and Chinese defense budgets looks very different, however, once the aforementioned factors are considered. The most widely used estimate for the size of the Chinese defense budget comes from the Stockholm International Peace Research Institute (SIPRI). SIPRI estimates the Chinese defense budget to be $290 billion,[7] roughly one-third of the U.S. budget ($858 billion in fiscal year [FY] 2023).[8] Australian economist Peter Robertson estimated the Chinese budget at approximately 59 percent of the U.S. defense budget.[9] Another estimate from The Heritage Foundation put the Chinese defense budget at roughly 87 percent of the size of the U.S. defense budget in 2017.

More recently, Senator Dan Sullivan (R–AK) revealed that an internal U.S. government document estimated the Chinese budget to be roughly $700 billion.[10] U.S. government analysts are likely calculating the hidden buckets of Chinese military spending to be significantly higher than what any previous civilian estimates have calculated.[11] These estimates, ranging from $290 billion to $700 billion, show the widespread disagreement over the true size of the Chinese defense budget in academia and government.

Soviet Defense Spending

During the Cold War, the Central Intelligence Agency was tasked with providing estimates of Soviet defense spending, which presented similar difficulties as the Chinese defense budget today. The Soviet Union, beginning in the 1940s and 1950s, would release a single figure for defense spending included in the annual budget produced by the Minister of Finance, accompanied by political propaganda that led American analysts to question its credibility.[12] As the Chinese do today, the Soviets would exclude military Research Development Test & Evaluation (RDT&E), militarized security forces, and nuclear warheads from the defense budget to obscure their real level of investment.[13]

American analysts developed two approaches to more accurately estimate Soviet defense budgets.

First Approach. The first approach relied on Soviet economic statistics, and rested on two assumptions—that the overall number for combined military and civil activities was more accurate than the military figure alone and that certain Soviet military activities were hidden within their civil budget.[14]

The Soviet Union was a planned economy, and as such it was relatively easy for economic planners to move money between buckets in a way that was not possible in the American economic system. The Soviet authorities did have to respond, however, to real-world events in a similar way to any other country, and the fluctuations in published budget top lines over time provided data that American analysts considered relatively accurate, especially when considered in the context of known events. For example, when the Soviet economy was doing well (in the context of, say, natural gas export prices being high), the overall budget would increase and Soviet decision-makers were free to increase defense spending. When the Soviet economy was doing poorly, cuts had to be made or resources had to be reallocated, and sometimes Soviet officials chose to move money from defense toward nonmilitary priorities.[15] So, in this method, the Soviet defense budget topline is simply converted from rubles to dollars, and estimates are made of what percentage of it is allocated to respective buckets of military spending (operations and maintenance, procurement, personnel).

To compare the Soviet and American budgets using this method while accounting for the differences in what activities each country counts as defense spending, one could either produce a very rough estimate of Soviet RDT&E and add it to the comparison, or subtract RDT&E from the American budget and only compare defense spending in terms of personnel, operations and maintenance, and procurement.

Second Approach. The second approach is known as *direct costing*, and it became the preferred method for producing estimates of the Soviet defense budget in the Intelligence Community (although the first approach would often be used to check the reasonability of the estimates produced by the second).

First, the Intelligence Community would identify line items within the Soviet defense budget, determine the cost of such line items, and then calculate spending by multiplying price by quantity for each line item. This was a monumental task, however, requiring long lists of every piece of Soviet equipment imaginable, estimates of how many of these line items were being produced each year and how many were in service, how much the equipment costs were to maintain once in service, the personnel costs of producing and maintaining the items, construction costs, and RDT&E. The

concept was to break down costs to a level at which American policymakers and commanders could ask a question along the lines of "What is the annual cost of maintaining a Soviet tank division?" and expect a reasonably accurate answer.

Equally important from the point of view of American military planners, the direct-cost process provided intricately detailed programmatic evaluations of the composition and structure of the Soviet military—data that for the military is much more useful than the topline budget estimates provided by the same analysis.[16] Force structure estimates came from the effort to determine the overall size of the Soviet defense budgets, but were useful as *relative* cost estimates even if their estimated *absolute* costs were not exact. That is, it was useful to know that one destroyer cost about the same as 20 fighter aircraft, even if it was not possible to estimate exactly how much that Soviet destroyer would have cost if it had been built in the U.S.[17] Such detailed lists and comparisons of adversarial force structures should ideally inform every budgetary, basing, and strategy decision made for the U.S. military by either the executive or legislative branch.[18]

The second part of direct costing involves the use of PPP to estimate the cost of goods in each country and adjust them for comparison. The first step was establishing a reliable dollar-to-ruble conversion ratio that could be used to produce both ruble and dollar estimates for the price of a given Soviet military expenditure. The most difficult aspects of using PPP to compare the Soviet and American defense budgets lay in the fundamental differences between the Soviet and American economies, questions about equipment quality differences, and lack of data. In the CIA's case, this was primarily a comparison of the cost of defense inputs, and not the costs of goods and labor across the entire Soviet economy.

Because cost, profit, and salaries for the American economy were known and familiar to the analysts, the easiest way to do this was to imagine how much each expenditure in the Soviet military budget would cost if it had been made in the United States. Analysts compiled lists of the components of a given weapons system (a T-72 tank, for example) and provided prices for what each component would cost in the United States, then looked at the labor needed to build the T-72 and estimated what paying workers for the same service would cost in the United States.[19] This method was intended to estimate the cost that the U.S. government would incur if it were to buy the same sort of systems here in the United States. When this comparison was used, Soviet military expenditures looked a good deal higher than they did when simply comparing the published Soviet defense budget with the published U.S. defense budget.[20]

Some estimates are easier than others. Personnel pay scale estimates for both the Soviet and Chinese militaries involve significantly less guesswork than some of the other cost estimates. In the Soviet case, American intelligence would determine, for example, the monthly pay rate of a Soviet colonel, a Soviet major, etc. If any pay grades were unknown, the rate could be extrapolated in comparison with the known pay grades.[21] Estimating the cost of certain materials used in the construction of military systems was significantly more difficult, as the cost of these materials might differ substantially between the Soviet Union and the United States, and American analysts had little information available to estimate costs within the Soviet Union's closed system.

Using PPP to compare different defense budgets does have some limitations. The reliability of PPP is only as good as the data provided on the costs of goods and services in a given country, and authoritarian states such as the former Soviet bloc and China are typically unwilling to provide very accurate information to the rest of the world—especially regarding goods and services with military applicability.[22] This was more of an issue in Soviet budget estimates than it is in Chinese budget estimates, however, because the Chinese economy is far more connected to the global economy than the Soviet economy ever was.

Direct Costing vs. Official Statistical Comparison

One organization that employed the official statistical comparison method was the Stockholm International Peace Research Institute (SIPRI), which was established by the Swedish Parliament in 1966 and receives much of its funding from the Swedish government.[23] During the Cold War, SIPRI put a great deal of stock in official Soviet statistics and used them as the basis of its analysis and comparison with the U.S. defense budget with few to no changes. Despite clear evidence of a Soviet military build-up throughout the 1970s, for example, SIPRI reported that Soviet military budgets had not changed throughout the first part of this period (reporting roughly $63 billion from 1970–1973) and then actually reported reduced levels of spending in the following years (dropping to $61 billion to $62 billion). At the same time, the CIA was estimating Soviet annual defense budget to be around $129 billion to $136 billion from 1970–1973, and to have *risen* to around $156 billion by the end of the decade.[24]

Analysts at SIPRI and other like-minded organizations routinely criticized the CIA's direct-costing method, with one SIPRI analyst writing in the 1980s that the CIA's estimates "were seen to legitimize and compel the Reagan Administration's historically unprecedented defense budget

increases."[25] In 1979, SIPRI released a report finding fault with other prominent techniques for measuring military spending and defending SIPRI's methods. Concurrently, while providing no rationale, SIPRI retroactively revised its estimates of Soviet defense spending during the 1970s, substantially increasing them.[26]

Debates on the appropriate level of U.S. military spending then, as now, often hinged on estimates of what America's primary strategic competitor, be it the Soviet Union or China, was spending on its military and how that amount related to the United States' own defense budget. Once the CIA started providing the Department of Defense with direct costing–based intelligence arguing that the Soviet defense budget was much higher than previously thought, Pentagon analysts used the information first simply as input in their own analyses—but eventually also as ammunition in policy debates over military funding.

These discussions began as early as the 1960s, when then-Secretary of Defense Robert McNamara used the results of the CIA's direct-costing analysis in a policy debate over anti-ballistic missile system funding.[27] CIA defense estimates started appearing in Secretary of Defense Postures Statements and the Department of Defense publication *Soviet Military Power*.[28] In the 1970s, Donald Rumsfeld, in his role as President Gerald Ford's Secretary of Defense, held unclassified briefings with congressmen and public policy leaders with national security backgrounds to argue against cuts to the defense budget by the Democratic-controlled Congress by outlining the true nature of Soviet defense spending relative to that of the U.S. The Soviets took note and condemned the briefings as a disgraceful attempt to justify the U.S. military build-up "on the basis of the 'hackneyed myth about the 'Soviet threat'...despite repeated Soviet assurances that the USSR threatens no one, does not increase its defense expenditures from year to year and seeks instead a reduction of all nations' defense budgets."[29]

President Ronald Reagan cited CIA estimates of the Soviet defense budget as part of the rationale for his proposed increase in the U.S. defense budget.[30] In a speech to the United Nations, President Reagan stated his belief that when building a defense budget, the spending levels of one's adversaries must be taken into account, saying, "the amount and type of military spending by a country are important...as a measure of its intentions, and the threat that country may pose to its neighbors."[31] Then-Secretary of State Caspar Weinberger agreed, saying of the Soviet budget in 1983*:* "You're making a terrible mistake if you try to adjust your defense budget to food stamps, harbor dredgings and highways. It's the threat that makes the budget. You've got to build your budget on the Russian budget."[32]

Perhaps inevitably, the CIA's estimates of the Soviet defense budget were either rejected or embraced depending on the policy objectives of the person interpreting them. The estimates produced by the Department of Defense (specifically the Defense Intelligence Agency) were consistently higher than those produced by the CIA. The CIA was thus producing data-driven estimates that were significantly higher than those produced by outside organizations that wanted to cut defense spending and significantly lower than those produced by the Department of Defense itself.[33]

Chinese Defense Spending

The People's Republic of China has steadily increased its defense spending for many years, but some Western analysts still maintain that U.S. defense spending outpaces that of China by such a huge margin that Chinese military growth should not be a concern. For comparison, on paper the Chinese defense budget for FY 2023 was around $225 billion, far behind the United States' overall defense budget for FY 2023 of $858 billion. Yet these two numbers, $225 billion and $858 billion, do not tell the whole story. Getting to a real comparison should not be an insurmountable task. As noted, China's economy is far more tied to the international market than the Soviet economy ever was, and much of the direct-costing estimates of its military spending should be significantly easier to calculate than was the case with the Soviet Union.

Cost Comparisons. A comparison of overall U.S. and Chinese personnel costs provides an illustrative example. In 2016, the United States military was authorized to have 1,301,300 personnel and spent a total of $117 billion in active-duty military personnel costs. The same year, China's military was estimated to have 2,333,000 personnel. If China spent at the same levels as the United States (roughly $89,927 per service member), the resulting total in Chinese personnel costs for the year would be $209.8 billion, which is almost equal to the total reported Chinese defense budget for 2016 ($215.2 billion). But recent estimates suggest Chinese active-duty personnel earn around one-quarter of what their U.S. counterparts do after adjusting for differences in average skill levels.[34] This suggests that China's 2021 personnel budget of $87 billion in market exchange rates is actually worth four times as much as U.S. salaries—$356 billion.[35]

Moreover, there is nothing mysterious about this comparison, as the difference in labor costs applies across the whole economy (unlike in the Soviet Union). For example, when comparing data on government employee salaries available from the National Bureau of Statistics in China to the

same data available from the U.S. Bureau of Economic Analysis at the U.S. Department of Congress, the U.S. government workforce is somewhere between 2.7 to four times more expensive than the Chinese government workforce.[36] There should be nothing controversial about recognizing that these labor cost differences also apply to China's defense sector, and the government salary scale in China likely provides a good model for military unit personnel costs.

Official Statistics. China's report on its defense spending splits its budget into three broad categories: personnel, training and sustainment, and equipment. China claims that RDT&E costs are accounted for in the equipment bucket of expenses.[37] More realistically, as with the Soviet Union before it, China *does not* include military RDT&E in its official defense spending, whereas the U.S. 2023 defense budget included roughly $130 billion for this purpose (much of which is not at all defense-related).[38] The Chinese economy, like the Soviet economy, is a command system, and the Chinese Communist Party has the ability to leverage all sectors of society for its broader strategic goals, including as part of its strategy of so-called military–civil fusion. Therefore, it is more than likely that substantial research with military applications is being conducted by Chinese state-run enterprises designated as civilian companies.

Of course, even if these efforts are taken into account, the numbers estimated for Chinese RDT&E spending fail to account for the widespread theft of intellectual property from the American and European defense industries. While the United States builds new aircraft through the traditional RDT&E process, spending many billions of dollars on research long before ever moving into development, the Chinese pirate American military technology to skip steps and arrive at essentially the same place more quickly and with less money spent.[39]

In addition to excluding RDT&E, a RAND study on China's military modernization efforts found that they also exclude foreign weapons procurement, paramilitary expenses, nuclear weapons and strategic rockets, state subsidies for the Chinese military-industrial complex, and extra-budget revenue.[40] Because these expenses are not explicitly itemized in the remainder of the Chinese government's budget, any attempt to determine costs remains an estimate at best. By any such measure, however, China's defense budget is significantly higher than the numbers the Chinese government releases for public consumption, and given the opaqueness of the Chinese Communist Party, American military and intelligence analysts have their work cut out for them in determining exactly how much bigger it is.

Conclusion

China announced a 7.2 percent increase in military spending in March 2023, and continues to be well on its way toward building a world-class military that will be "fully mechanized and informationized" by 2027.[41] The Office of the Director of National Intelligence has assessed that China has been increasing its military spending with the goals of securing Chinese territory, establishing preeminence in East Asian affairs, and projecting power globally while offsetting American military superiority.[42] The United States will need to make a corresponding defense investment if it hopes to maintain that superiority. The lessons American analysts learned deciphering the Soviet military budget are applicable to this new strategic competition, and if it is of a similar duration to the Cold War, the same level of long-term analysis and planning will be necessary.

Just as during the Cold War, if the U.S. government is to have a realistic estimate of China's military spending, it must train new economic analysts to perform the same estimating work as on the Soviet defense budget. The CIA and Defense Intelligence Agency published their estimates of total Soviet defense spending throughout the Cold War because the public had a right to know why U.S. defense spending was so high, and because the debate about defense spending is uninformed and misleading if one relies solely on the official statistics of adversarial governments. U.S. intelligence agencies and military must do large-scale direct-costing analysis of the Chinese military, accounting for PPP and hidden costs, and they must then publish their findings to inform the public debate and to give American policymakers the information they need to build an American military capable of deterring China.

This work must begin now. To quote Bruce C. Clarke, former Deputy Director for Intelligence and former Director of Strategic Research at the CIA:

The history of the agency's program to analyze Soviet spending amply demonstrates how long and tedious this intellectual undertaking can be, conceptually, evidentially, computationally, etc. Years are required to be ready to give good answers when they are needed. When the nukes start to fly, the tanks start to roll, and the landing craft are launched, it's too late to begin creating the necessary databases and methodologies. But this is true of U.S. force level determination too. Long lead times are involved and they must proceed with at least some rationally derived view of what they may be up against ten years hence.[43]

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