

# Introduction to International Relations

## Lecture 12: Defense Spending

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**Overview.** We begin our foray into questions of political economy by constructing a bridge from questions of security: how much should we spend on the military? We analyze some commonly cited statistics of military expenditures in a comparative perspective, and then study some of the trade offs between guns (military) and butter (social welfare) programs.

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## OUTLINE OF LECTURE 12: DEFENSE SPENDING

1. National security
  - a) how much security (versus civil liberty) do we want?
  - b) how much security can (should) we afford?
2. How much do we spend?
  - a) in absolute terms, a whole lot
  - b) still high relative to allies and even opponents
  - c) but not as high as percent of income
  - d) steadily declining trend as percent of GDP
3. Is our military too large?
  - a) global security commitments (we finance many friends too)
  - b) wars will be fought with existing forces
  - c) army not that large compared to potential adversaries
  - d) army certainly small compared to real wars
4. Opportunity costs (guns v. butter)
  - a) prosperity without security?
  - b) are education/health starved for money?
  - c) military spending is also social spending
    - research and development
      - basic research, no commercial value
      - spin-offs (Internet, computers, jet engines, satellites, robotics, lasers)
      - dual-use (flat panel displays)
    - civilians employed by DOD
    - civilians in defense industries
    - California and San Diego
5. Government inefficiency
  - a) accounting and indirect costs
  - b) cost overruns
  - c) non-competitive contract awards
  - d) market distortion

## 1 How Much Security Do We Want and Can Afford?

As the famous strategist Bernard Brodie put it, “strategy wears a dollar sign.” While we can never buy absolute security, we may not want to spend too much to buy even partial security. How much is “too much” depends on your perspective and ability to make difficult, sometimes painful, choices. Since major total war like the two conflagrations of the 20th century are highly unlikely today, total mobilization of society is perhaps out of the question. As we have seen, the absence of world war does not mean peace. In fact, many more people have died in wars since 1945. Violence does not seem to decrease. This means that we should be ready to deal with conflicts that do not resemble the world wars and their total mobilization of nations. Instead, most conflicts today will be fought out with what we have available when we enter them. In other words, we should depend much less on the vast American potential because success will be determined primarily with existing forces.

There are two inter-related questions that we would like to answer. First, how much security is enough? I suspect the answer to this question changed dramatically on 9/11 as the nation suffered the most devastating attack on its own soil since the British burned Washington. It would appear that much of the argument has shifted from puzzling over how much we should spend on national defense to squabbling over how the money should be allocated between the various defense programs. Very few today seem to advocate a drastic reduction in defense expenditures. However, quite a few people feel that the outlays are misdirected and do not enhance our domestic security as much as they could. In general, one could get near absolute security at the enormous expense of freedom. The USSR was mostly secure and complete unfree. Turning America into a garrison state will perhaps seriously undermine the ability of terrorists to harm us but then it would accomplish their goals by denying us the very liberty that defines our social order in opposition to theirs. The balance between freedom and security is controversial to locate and difficult to achieve but I would like to mention Benjamin Franklin’s famous 1759 thought because it so aptly summarizes my own feelings (as someone who has lived in a country mostly secure but unfree):

Those who can give up essential liberty to purchase a little temporary safety, deserve neither liberty nor safety.

We shall spend most of our time puzzling over the second question: How much security can we afford? This involves considering the military necessities (strategic requirements, projections for future needs, and replacement of obsolete equipment) together with the opportunity costs of military spending.

## 2 How Much Do We Spend?

How much do we spend?<sup>1</sup> A lot. In 2002, the federal government spent about \$349 billion on national defense (this includes Department of Defense payroll, operating costs, weapons purchases, and research, as well as military spending at the Department of Energy). This seems like a really high number and it is: our allies spent a total of \$213 billion in 2000, our potential adversaries, a meagre \$14 billion, and even if you throw in China (\$40), Russia (\$56), India (\$16), and Pakistan (\$3), their total spending would go up to \$342 billion. In other words, America spends more on its military than just about all other significant nations combined.

But what does \$349 billion mean? Let's put it in some perspective. The average annual federal spending (in constant 2000 dollars) during the Cold War (1946-91) was about \$106 billion. This spending includes three significant peaks: the Korean and Vietnam Wars as well as Reagan's buildup in the 1980s. In today's dollars, the spending began exceeding the average in 1978 and has not dipped since (recall that 1979 was the year of the Soviet invasion of Afghanistan and the Iranian Revolution). It seems, therefore, that even compared to the Cold War, the current spending seems excessive. It is certainly much higher than what the *peace dividend* proponents hoped for.<sup>2</sup>

But how much higher? On one hand, in the federal government spent only about \$71 billion on education, and \$427 billion on health and Medicare. On the other hand, significant amounts of funding for these comes from state and local governments, not to mention private sources. Unlike the military, many other areas can be funded from state and private sources, and hence a direct comparison of federal government expenditures does not mean much.

So perhaps it is better to ask how much we are spending today relative to what we make? In 1948, right before the Cold War got really under way, we spent about \$9 billion (in 2000 dollars) on national defense. However, this amounted to 3.6% of the national income, the gross domestic product (GDP). As Figure 1 shows, according to this measure, military spending has declined quite drastically over the years. In 2002, we spent 3.4% of GDP on the military, or nearly a third of the Cold War average of 9.5%. In other words, even though our military spending is relatively high in absolute terms, it does not appear excessive as a fraction of our income.

But to make such a statement, we need some sort of reference: what does "normal" military spending as percent of income look like? Let's compare to other countries. Most other Western nations spend proportionately less than the U.S. For example, Britain spends 2.57% of its GDP, Germany spends 1.55%,

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<sup>1</sup>All U.S. budget figures are from the Historical Tables ([www.whitehouse.gov/omb/budget](http://www.whitehouse.gov/omb/budget)). All other figures in this section are from the *Military Almanac, 2001-2002* published by the Center for Defense Information unless otherwise noted.

<sup>2</sup>The "peace dividend" refers to the windfall of funds expected to be released by the inevitable contraction of defense expenditures after the end of the Cold War. It turned out to be much less than predicted.

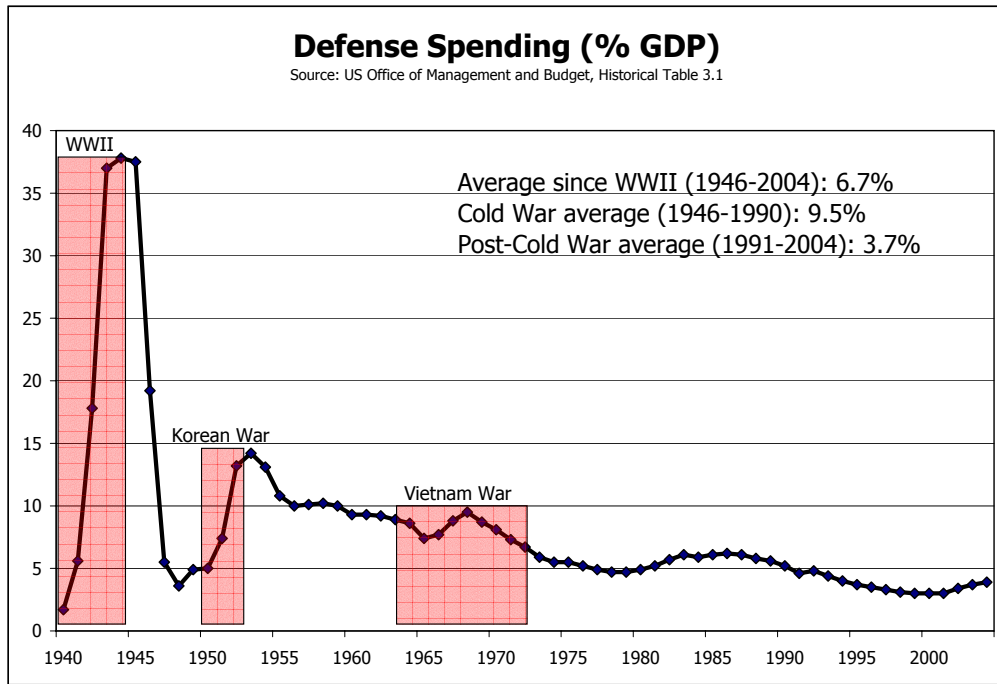


Figure 1: U.S. Defense Spending as Percent of GDP.

and Japan only 1.03%. However, some spend much more: Greece spends 4.91%, Turkey 5.55%, and Saudi Arabia close to 14%. Of our adversaries, North Korea probably spends close to 40% and the Soviet Union used to spend an inordinate amount as well (which is one reason it finally went bankrupt).

It is worth noting that one important reason all these advanced developed countries can spend less than the U.S. is because we are paying for their security as well. One relic of the Cold War is that America shouldered the defensive burdens for Western Europe and the Far East (Japan, South Korea, and Taiwan), which allowed countries under the security umbrella to spend much less on the military relative to what they would have had to spend if they had to provide their security for themselves. (The exception, the two NATO countries that have relatively high expenditures—Greece and Turkey—have been in conflict with each other for a long time.)

So, the U.S. does not seem to be spending an excessive share of its income on the military. The reason the absolute amount is so large is not because Americans are crazy about their military but because the country produces so much and is so rich that even a moderate share of its GDP going to the military results in an enormous total sum. The figures often do not tell the entire story. One must consider both context and historical trends.

Is our military excessively large? In 2002, the U.S. had about 1.4 million active troops with slightly fewer in reserves. Together with its NATO allies, Australia, Japan, and South Korea, the West has slightly fewer than 5 million soldiers on

active duty, and twice that number in reserve. Of the potential enemies, North Korea alone has over 1 million men under arms and about 4.7 million in reserve, while Iran has 0.5 million active and 0.35 million in reserve. Now that Iraq is out of the picture, our potential enemies can field fewer than 2 million troops and about 5.5 million reserves. Hence, the West seems to enjoy a significant preponderance of power.

However, this does not take into account several countries that are significant for world politics. China alone has 2.5 million active troops and half a million reservists. Russia has slightly over 1 million actives and 2.4 million reservists. Pakistan has 0.6 million troops and 0.5 million reservists (India has twice the number on active duty and about the same number of reserves). If one adds these numbers, then suddenly the West faces a parity in military personnel with potential adversaries.

The raw numbers do hide the enormous technological advantage Western, and especially American, troops enjoy. None of these other countries has such an effective and lethal military. However, neither has the global commitments that America does. We still station troops in South Korea (37,000), Europe (largest contingents: 70,000 in Germany, 11,000 in Britain and Italy, plus 11,000 in former Yugoslavia), and the Middle East. In fact, in 2000 about 258,000 troops were stationed around the world, close to one-fifth of all active duty personnel. Suddenly, the total size of the American military seems quite a bit less impressive. In fact, one could argue with conviction that we are doing much more with fewer troops compared to just about every other country. Again, the numbers themselves cannot tell the entire story, one must carefully consider their context.

I should note that the current number of military personnel on active duty is comparable to the post-Cold War totals, and is much less than the numbers mobilized during the Vietnam War (3.5 million in 1968), the Korean War (3.6 million in 1952), and certainly World War II (12 million in 1945).

### **3 Opportunity Costs: Guns and Butter**

Some claim that ours is a permanent war economy. That is, a semi-command economy that is mostly geared to military rather than civilian production. The argument is that we spend much more on the military than we do on social services, education, health, and other worthy areas. Because all resources are limited, each dollar spent on defense must be considered in terms of its *opportunity cost*: that is, what desirable goods must we forego in order to buy the next dollar worth of security. President Eisenhower summed it best:

Every gun that is made, every warship launched, every rocket fired signifies, in the final sense, a theft from those who hunger and are not fed, those who are cold and are not clothed.

The perennial question (without an answer, it seems) is whether spending more on military (guns) hurts our ability to provide desirable social goods (butter).

The tension between spending on security and prosperity became most obvious during President Johnson's tenure when his administration attempted to finance both the Vietnam War and the Great Society program at the same time.

The trade-off may be more apparent than real for two reasons. First, without security one can hardly enjoy one's prosperity, at least not for long. Germany and Japan can afford to spend so little on national defense because the U.S. is providing it for them. Some of the most acrimonious debates between America and its allies during the Cold War revolved around burden-sharing in NATO and other alliances. Simply put, the U.S. wanted its friends to take a larger responsibility in financing the common defense and the allies simply wanted to shift as much of it on the U.S. as possible. Because the U.S. did not have a credible threat to abandon them, the Europeans in particular were able to get away with minuscule spending on their military. In an important sense, America cannot afford not to spend enough on its military. Unless we are prepared to abandon some of our strategic commitments, of course. At a very important fundamental level, there is no trade-off between guns and butter: one simply has to spend something on guns if one wants to be able to enjoy any butter whatsoever. How much? As usual, it depends on one's potential adversaries, their capabilities and their intentions. More powerful opponents require the dedication of a larger share of one's resources to defense.

Second, it is not even clear that the problems with education and health, among other things, stem from lack of funding. Let's take education as an example. Since I have some data for 2001 handy, we shall use that as a reference year. In 2001, the federal budget allocated \$305 billion to national defense and a paltry \$57 billion to education (it should be noted that the recent allocations have been much higher, currently close to \$90 billion). But this does not mean that the U.S. spent only that much on education. In fact, in 2001, the U.S. spent roughly \$500 billion on education, the highest amount worldwide.<sup>3</sup> As percent of GDP, the U.S. ranked tenth, although it's not clear what this means: Saudi Arabia ranked first, investing 9.5% in education. The U.S. ranks second in per capita spending on education with \$1,780 (Norway led with \$2,850). So even after all that money going to the military, we seem to be spending a lot on education.

So why do our schools perform so badly? Why do (non-university) students rank so much lower than many Western Europeans and Asians? One cannot really blame classroom over-crowding, poor facilities, and not enough spending per student. Why? Because we are spending more per student than any of the countries whose students do much better. Let me give a personal example to clarify this point. I went to the most prestigious high school in Bulgaria (the First English Language School in Sofia). The school had about 1,200 students. We shared our building with another school, each would get half a day use of the same facilities. There were peeling walls, broken windows, and really ugly toilets. We had a doctor and a nurse, a handful of janitors and a few people to run the cafeteria... and that was it! No administrative staff to speak of,

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<sup>3</sup>Japan came second with \$139 billion, followed by Germany (\$89) and France (\$82).

just a principal and a vice-principal, both of whom taught regular classes. We purchased our books (or used hand-me-downs), had no computers (except a few 8-bit machines for the lone computer science class in 10th grade), and had to content ourselves with a gym that made everyone want to go out and play soccer. Oh yeah, and we did not have a school library. I am sure that the Bulgarian government was paying a fraction of what we pay per student.

However, the education we got is comparable to the best private schools here. It was not a matter of money, but rather a matter of good teachers (almost all of them had degrees in the field they taught), tough standards (yes, constant and demanding testing), and a culture that promoted education (it helped that the students had to pass two entrance examinations). I very much doubt that having ten counselors, fifty administrators, an advanced gym with a swimming pool, or computers would have made much, if any, difference. So, here's something to think about: the Los Angeles Unified School District manages to spend almost 70% of its money on administrators who never see or educate a single child. The Teachers Union has successfully opposed any attempts to introduce rigorous standards for either teachers or students. Our problem is not that we do not have money for education but that a lot of the money we spend is wasted. So next time someone tries to blame the military spending for our educational woes, you should probably refer them to some basic statistics on the subject.

Third, not all military spending takes away from consumption. As I mentioned above, even though one could determine how much social services the government could provide for its citizens in lieu of military spending, the comparison would be misleading because (a) private funding can, and does, provide many of these services, usually at a fraction of the cost, and (b) it is unclear that government-subsidized programs would not introduce distortions in the economy that would have deleterious overall effects. (We shall talk more about this later.)

However, one does not have to rely on private financing or esoteric economic theory to support the proposition that military spending can be beneficial to society quite apart from the security the resulting capabilities provide. The most obvious benefit comes from **research and development** (R&D) spending on:

- *Basic research* (also sometimes called pure research), unlike applied research, is conducted without a practical end in mind. Its primary goal is to gain knowledge for its own sake, not solve specific questions. A lot of research in pure mathematics, theoretical physics and biology, social sciences, and even philosophy is directed toward this end. Because the process is exploratory and often without practical application, it is not commercially viable. Hence, profit-driven private companies would be loath to fund it. Without government financing, this important area would be neglected. This would be a tremendous handicap not only because we genuinely may want to know when in human history logical thought arose, but also because basic research often precedes and is necessary for ap-



plied research. A lot of funding for basic research goes through various military programs. Whereas it is true that the government does not have to funnel the money through the military, politically it may be very difficult to justify such research when it is not somehow connected to defense.

- Military research often produces *spin-offs* for civilian use. The most famous examples are the Internet and microchips, both crucial to our society today. The Internet started in 1969 as a project of DOD's Advanced Research Projects Agency (ARPA). At first, the bureaucrats simply wanted to save money by enabling their geographically dispersed facilities to use the same expensive hardware. Very soon, however, the project evolved further: The agency was looking for a way to design a decentralized computer network that would make the communications infrastructure less vulnerable to attack by ensuring that even if part of it is destroyed, the rest could still function. ARPANET researchers developed the basic networking protocols and provided the backbone for the modern Internet. Can anyone imagine what life was like back in the pre-www dark ages? While integrated circuits (microchips) were invented at Texas Instruments, the Minuteman II nuclear missile program was crucial to their development because it spurred the mass production of computers constructed of such circuits and absorbed most of their production, along with NASA, for five years until 1967. Without these chips, we would have no microprocessors, no computers, and no Internet. Other important spin-off technologies are jet engines, microwave ovens, satellites, robotics, lasers, and (obviously) nuclear power. Research on intelligent transportation systems will also eventually find its way into civilian life. Many people claim that the virtuous market economy has propelled the U.S. to prosperity but the startling truth is that this only happened after the R&D stage that was financed by the government for military purposes.
- *Dual-use* projects aim at developing technology that is suitable for both civilian and military use. Policies that targeted dual-use projects came after the end of the Cold War when a lot of the funding dried up, and so the Pentagon saw dual-use as a strategy for improving efficiency. Even though Congress killed some of the programs, some succeeded. For example, the development of flat panel displays (FPD) was spurred once DOD thought of military applications and began pouring money into the project. Perhaps not surprisingly, the military demand for strong encryption software was instrumental in creating the crypto algorithms that are essential to global communications today.

Where does most of the money requested for military purposes go? In the 2002 military budget of \$328.9 billion (this does not include DOA's nuclear weapons programs), the Bush administration requested \$47.4 for R&D, which amount to slightly over 14% of the budget. At \$61.6, procurement devoured a larger share of about 19%. However, the bulk of the money was allocated

to operations and maintenance (\$125.7 billion, or 38%) and military personnel pay \$82.3 billion (25%). These numbers are important because one must realize what the money goes to pay for. The Department of Defense currently employs about 725,000 civilians (yes, these are in addition to the troops). On top of that, there are about 2.7 million workers in defense-related industries. It is impossible to curtail military spending without seriously curtailing these numbers. Hence, one cannot simply transfer a few billion from military spending to some other “worthier” program (e.g. providing for the poor) without giving some thought to the people that would be laid off and would, in turn, have to be provided for somehow. Because of its sheer size, the defense industry is of critical importance for the national economic well-being.

We live in California. Why does that matter? Because our state is the largest recipient of government military-related funds. In 1999, California received 15% of military contract awards for a total of \$17.37 billion. In the same year, military personnel stationed here (10% of total) received another \$11.40 billion in total compensation. If you care about the dire financial situation in this state, you should think twice about getting agitated against military spending. San Diego is inextricably tied to the military. In fact, it is almost impossible to imagine what would happen if the military moved out or drastically curtailed its presence in the region. The military brings about \$13 billion (second only to manufacturing), which accounts directly for about 13% of the regional economy. In addition to the millions the military spends here indirectly (business trips of contractors, for example), for every two jobs supported directly by the military, the region can employ another person. As one study concludes, “for every \$1 million increase in military expenditures for operations and construction, the region adds nearly 14 jobs and the GRP [gross regional product] rises by \$777,000.”<sup>4</sup>

Finally, there is the argument of **government inefficiency and wastefulness**. It goes like this: the government bureaucracy is so bloated and soaked through with special interests that it spends far more than it has to on the projects it manages. We have all heard about the \$1,000 toilet seat or the \$500 hammer that the government bought. More recently, I read about self-locking nuts (the kind you’d get for about \$3 at the hardware store) being sold to the military at \$2,000 a piece. Yet one has to understand that many of these prices can be readily explained by government accounting practices. One type of expense are the *direct* costs that cover readily identifiable components of each project (supplies, salaries). These must be reasonable and necessary. Of course, \$2,000 for a nut is neither. However, the other type of expense are the *indirect* costs that are incurred as part of financing a project but that are difficult to estimate before the project begins (administrative, facilities, phones, office supplies).

The government usually spreads the indirect costs evenly across the components used in the project, which means that if the project includes 5 nuts and an \$1 million machine with \$20,000 in indirect costs, the nuts will get \$10,000

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<sup>4</sup>See the report at [http://www.globalsecurity.org/military/facility/san\\_diego.htm](http://www.globalsecurity.org/military/facility/san_diego.htm)

tacked on top, or about \$2,000 per nut. This does not mean that the government actually paid that much per nut, and headlines that suggest otherwise are misleading.

To give you an idea about the magnitude of these indirect costs and what accounting practices can lead to, consider my own experience. UCSD charges over 50% of the amount of each research grant in administrative fees. This means that if you need \$200,000 for research from the National Science Foundation, you should ask for over \$400,000. If I asked for a \$5,000 computer and support for one assistant and then allocated these indirect costs evenly, I'd end up "paying" \$105,000 for the computer, a clear instance of abusing funds that would probably earn me a ridiculing headline in *The Guardian*. These percentages are not solely due to UCSD being a public institution; the situation is similar for private ones as well.

All this does not mean that there is no waste in government procurement practices. The big problem is that projects appear wasteful only after they are started (or sometimes only after they have been completed). The reasons are cost overruns — contractors quite often make lower bids and then claim unexpected expenditures — but also indirect costs that are very hard to estimate with any precision, especially in advance.

The huge problem with government procurement actually has to do with it awarding contracts without much competition. DOD looks a lot like a Soviet central planner when it does business, and Congressional competition for this business has probably left the defense industry with excess capacity. Because there is limited or non-existent market competition, the costs are forever inching upwards. It is precisely this area that may see much improvement if the Pentagon is forced to reckon with smaller budgets. Instead, politicians are awarding DOD with increasingly enormous budgets, removing any incentive to reform. I should also note, however, that some oppose turning defense into a commercial sector, in part because this would mean that foreign companies can rely on American largesse as well (this is actually already the case, some of the defense money goes abroad to foreign defense contractors).

The basic points of this lecture are as follows. First, it is misleading to consider the total amount of military spending without context, either relevant historical trends or comparisons with other nations. Second, one must evaluate the size of the military relative to the use one intends to put it to, and to the challenges it will have to confront. Third, military spending is also social spending in many important ways, and so it cannot be said to detract absolutely from other social goals. Fourth, in some of the hottest areas (like education), the problem is one of mismanagement, not lack of money, so spending on the military cannot be blamed for the mess. Fifth, the military is quite important to California in general and San Diego in particular. Sixth, even though government inefficiency is somewhat exaggerated, the government can benefit from a reform in the way it does business, which will probably bring the costs of maintaining the military down significantly.