

## *Job Opportunity Cost of War*

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President Donald Trump's recent request to increase military spending by \$54 billion represents a 10 percent increase to the military budget and comes at the expense of cuts to domestic programs and foreign aid.<sup>2</sup> In order to increase funding for the so-called "War on Terror," either other domestic spending must fall – in areas like education or healthcare – or the national debt must increase, obligating the American public to increased interest payments in the future.

Increased military spending is often seen as a politically favorable strategy, since the military industrial complex is spread throughout many parts of the United States, and many Congresspeople want to earmark or protect spending for their constituents. Moreover, war spending is generally thought of as a way to increase employment – to create jobs not only in the military itself but also in the industries that supply goods and services to the military, for instance the manufacturers who produce weapons and uniforms.

But is military spending the best way to create jobs? What do we sacrifice by increasing defense spending? In economics, what we lose by pursuing a particular strategy is called an "opportunity cost." By spending money on the military and homeland security, we lose the opportunity to spend those funds on other things like education, healthcare, infrastructure, or clean energy. By forfeiting those opportunities, we lose the chance to fund programs that create even more jobs than military spending.

Since 2001, because the federal government has spent trillions of dollars on the wars in Iraq, Afghanistan, Syria, and Pakistan, we have lost opportunities to create millions of jobs in the domestic economy, and we have lost opportunities to improve educational, health, and

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<sup>2</sup> Koshgarian, Lindsay. 2017, Feb. "President Trump's \$54 billion Pentagon Grab." National Priorities Project. <https://www.nationalpriorities.org/blog/2017/02/28/president-trumps-54-billion-pentagon-grab/>

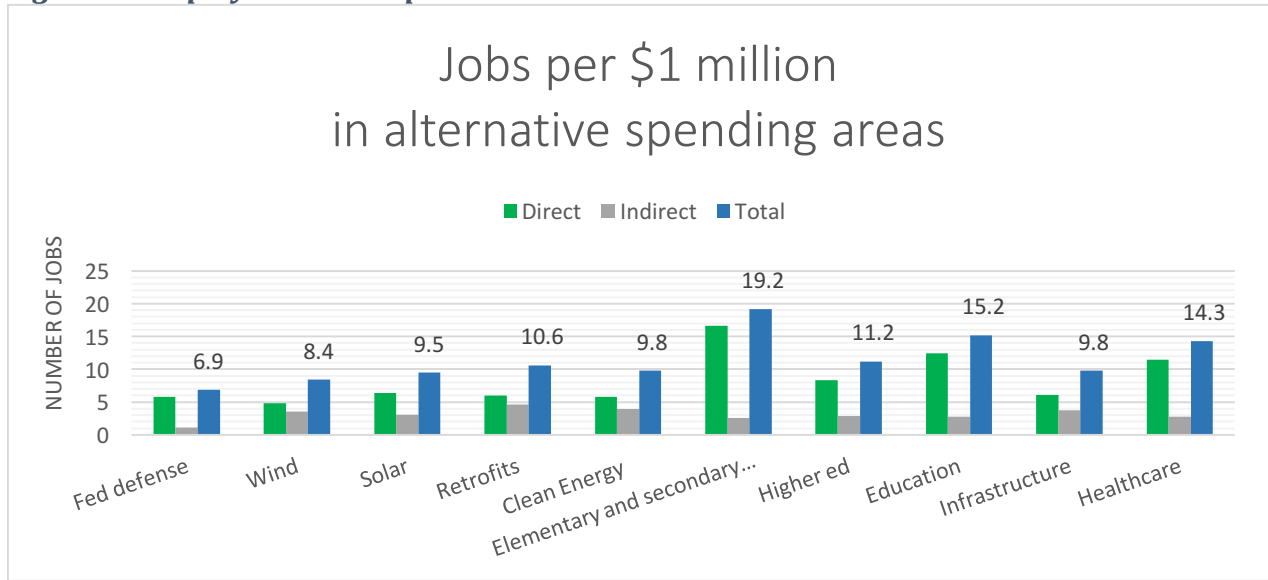
environmental outcomes for the American public. As we will see below, while defense spending is indeed a source of job creation, these other areas create many more jobs for any given level of spending. Education and healthcare create more than twice as many jobs as defense for the same level of spending, while clean energy and infrastructure create over 40 percent more jobs. In fact, over the past 16 years, by spending money on war rather than in these other areas of the domestic economy, the US lost the opportunity to create between one million and three million additional jobs.

In this report, we estimate the employment multipliers for defense spending as well as other types of federal spending in the US economy, in order to assess the claim that defense spending is a good source of job creation and to compare that to alternative uses of those funds. We use IMPLAN v3, an input-output model compiled by the Minnesota IMPLAN Group using data from the Bureau of Economic Analysis, Bureau of Labor Statistics, US Census, and other sources. We estimate employment multipliers using 2015 US data, the most recent available at the time of this analysis. We adjust for inflation so that the employment multipliers from IMPLAN are based on 2016 dollars and are readily comparable to the other spending data we analyze, also using 2016 dollars.

Input-Output (I-O) models are essentially a snapshot of the economy, showing us the linkages between various industries as well as different sources of demand (households, businesses, government, and exports). I-O models estimate the various components of the supply chain, or the inputs that go into producing any good or service. They also show the outputs, where each industry sells its goods or services to various categories of customers. By using an I-O model, we can estimate both the direct and indirect jobs associated with any type of spending. The direct jobs are those that are created directly in the industry in question, while the indirect jobs are those created through the supply chain. So, for example, with military spending the direct jobs are those created in the Department of Defense, whereas the indirect jobs are created in manufacturing, transportation, IT, and other industries that supply goods and services to the military. Similarly, in education the direct jobs are those for teachers, principals, and office staff; the indirect jobs are in industries such as textbook publication, furniture manufacturing, electric utilities, and so on.

Figure 1, below, (as well as Table A1 in the Appendix) shows the employment multipliers – direct, indirect, and total jobs – for defense spending in comparison to other domestic alternatives.

**Figure 1: Employment Multipliers**



We see from Figure 1 that each \$1 million of spending on defense creates 5.8 jobs directly in defense industries and 1.1 jobs in the supply chain, for a total of 6.9 jobs per \$1 million of federal defense spending. In comparison, spending that same amount in wind or solar energy creates a total of 8.4 or 9.5 jobs, respectively. Energy efficiency retrofits create 10.6 jobs per \$1 million, which is more than 50 percent above the level of job creation supported by military spending. General infrastructure, which here includes street/highway/tunnel/bridge construction as well as new and repair construction of schools and other non-residential buildings, creates over 40 percent more jobs than the military, with a total multiplier of 9.8 jobs per \$1 million spending.

When we look at education and healthcare, job creation is even higher. Healthcare spending creates more than twice as many jobs for the same level of spending, while education creates up to nearly three times as many jobs as defense spending, particularly for elementary and secondary education. The employment multipliers for these domestic programs are 14.3 for healthcare, 19.2 for primary and secondary education, and 11.2 for higher education; the average figure for education is 15.2 jobs per \$1 million spending.

In order to ascertain the full extent of lost job opportunities, we can draw on data calculating how much the US has spent on wars since 2001, as well as how much it has spent in the Department of Defense as a whole (which includes not only war spending but also the so-called “base budget.”). Crawford (2016) estimates that from September 2001 to August 2016, the US spent a total of \$3.69 trillion on various wars as well as increases to the

Pentagon’s base budget that can be considered war-related.<sup>3</sup> Below we present data from Crawford (2016), itemizing the costs of war since 2001:

**Table 1: War-related spending, FY2001-FY2016**

	Total FY2001-FY2016, billions of current dollars
Iraq	\$805
Syria	\$12
Afghanistan	\$783
Pakistan	\$8
Operation Noble Eagle	\$28
Other Overseas Contingency Operations (OCO)	\$107
Other War-Related: estimated additional DOD base budget (\$733 B) and Veterans (\$213 B) spending, FY2001 - FY2016	\$946
Homeland Security spending for prevention and response to terrorism, FY2001- FY2016	\$548
Interest on borrowing for wars, FY2001-FY2016	\$453
<b>TOTAL War-related spending FY2001-FY2016</b>	<b>\$3.69 trillion (\$230 billion per year)</b>

Source: Crawford 2016, Tables 1 and 2, pgs. 3 and 7

Below we assess the total job opportunity cost of war based on the estimate of \$3.69 trillion over the period 2001-2016, which averages \$230 billion per year for strictly war-related spending (above the Pentagon’s peace-time base budget).

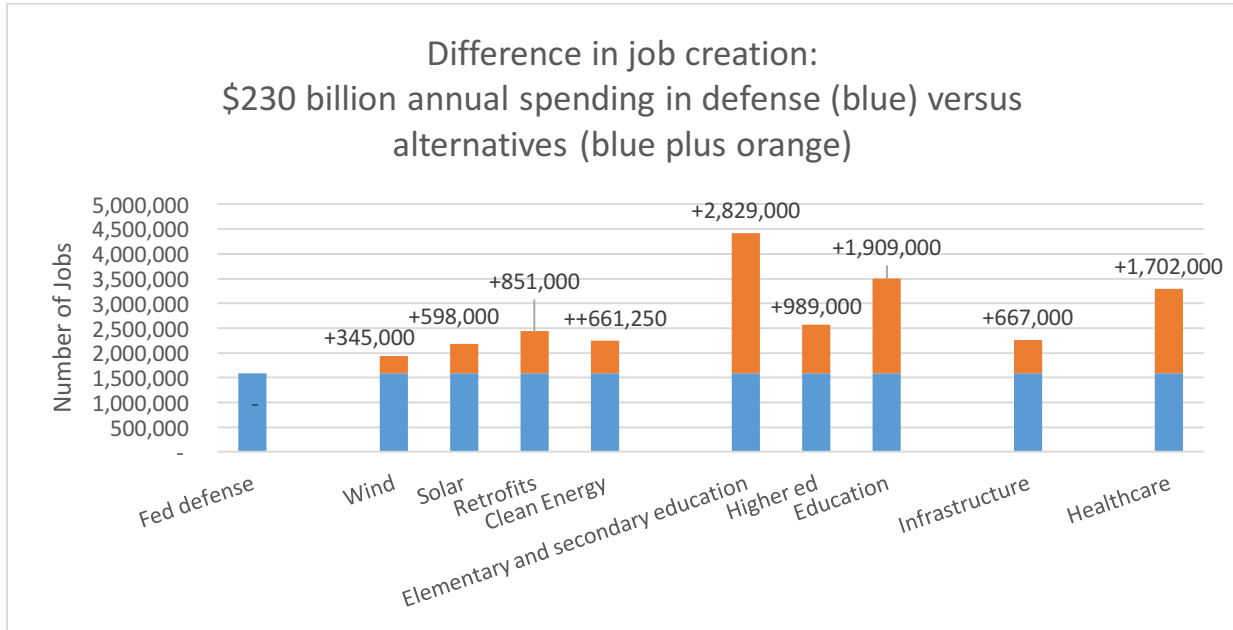
In Figure 2, below, (as well as in Table A2 in the Appendix), we show the total number of jobs sustained through military spending at \$230 billion per year. We then compare this level of defense-related job creation to what could have resulted if the US federal government had spent these funds on clean energy, infrastructure, education, and/or healthcare, rather than on war.

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<sup>3</sup> Crawford, Neta. 2016. [“US Budgetary Costs of Wars through 2016: \\$4.79 Trillion and Counting, Summary of Costs of the US Wars in Iraq, Syria, Afghanistan and Pakistan and Homeland Security.”](#) Watson Institute for International & Public Affairs, Brown University.

Crawford (2016) estimates \$4.8 trillion as the full cost of the “War on Terror” to date. The \$3.6 trillion used in this report accounts only for funds that have been spent, appropriated, or obligated. The additional \$1.2 trillion in Crawford’s more comprehensive estimate include additional funding requests for FY17 as well as estimated future spending for veterans.

**Figure 2: Total Annual Employment from \$230 Billion per Year**



*(Note: Value labels shows the additional jobs created above the level of defense-related job creation)*

War-related spending at a level of \$230 billion per year supported about 1.5 million defense-related jobs on an annual basis, not an insignificant amount of employment. However, if that same level of spending had been channeled to other domestic purposes, it could have supported over 2 million jobs in clean energy or infrastructure, over 3 million in health care, and over 4 million jobs in primary and secondary education. When we compare the 1.5 million jobs supported by military spending to the 4.3 million jobs that could have been created through primary and secondary education, the lost opportunities are nearly 3 million jobs. If we look at the average job creation potential of healthcare, education, clean energy, and infrastructure, \$230 billion could have created about 2.8 million jobs instead of the 1.5 million created through war spending, thus the average opportunity cost is about 1.3 million jobs annually. These potential jobs are one of the many economic losses faced by the US public due to federal spending on war.

The costs of war are many, and go well beyond economic costs. In this paper, however, we focus solely on the economic losses from defense spending, and we find that by spending trillions of dollars on wars since 2001, the US lost the opportunity to create millions of jobs in other sectors, and further lost the opportunity to create a healthier, more educated, and more economically secure nation.

## Appendix: Supplemental Tables

*Table A1: Employment Multipliers Per \$1 Million Spending*

US 2015 data, IMPLAN v3				
	Direct	Indirect	<b>Total</b>	% Above Defense Job Creation
<b>Federal defense spending</b>	5.8	1.1	<b>6.9</b>	
<b>Wind</b>	4.8	3.6	<b>8.4</b>	+21.7%
<b>Solar</b>	6.4	3.1	<b>9.5</b>	+37.7%
<b>Retrofits</b>	6.0	4.6	<b>10.6</b>	+53.6%
<b>Clean energy (50% retrofits, 25% each solar and wind)</b>	5.8	4.0	<b>9.8</b>	+41.7%
<b>Elementary and secondary education</b>	16.6	2.6	<b>19.2</b>	+178.3%
<b>Higher education</b>	8.3	2.9	<b>11.2</b>	+62.3%
<b>Education (average of primary, secondary, and higher education)</b>	12.5	2.8	<b>15.2</b>	+120.3%
<b>Infrastructure</b>	6.1	3.7	<b>9.8</b>	+42.0%
<b>Healthcare</b>	11.5	2.8	<b>14.3</b>	+107.2%

*Note: Some totals have slight discrepancies due to rounding*

**Table A2: Job Creation From \$230 Billion Spending Per Year**

	<b>Number of jobs created or supported annually</b>		
	<i>Direct</i>	<i>Indirect</i>	<i>Total</i>
<b>Fed defense</b>	1,305,000	247,500	<b>1,552,500</b>
<b>Wind</b>	1,080,000	810,000	<b>1,890,000</b>
<b>Solar</b>	1,440,000	697,500	<b>2,137,500</b>
<b>Retrofits</b>	1,350,000	1,035,000	<b>2,385,000</b>
<b>Clean Energy (50% retrofits, 25% each wind and solar)</b>	1,305,000	894,375	<b>2,199,375</b>
<b>Elementary and secondary education</b>	3,735,000	585,000	<b>4,320,000</b>
<b>Higher education</b>	1,867,500	652,500	<b>2,520,000</b>
<b>Education (Average)</b>	2,801,250	618,750	<b>3,420,000</b>
<b>Infrastructure</b>	1,372,500	832,500	<b>2,205,000</b>
<b>Healthcare</b>	2,587,500	630,000	<b>3,217,500</b>