

COSTS OF WAR



United States Budgetary Costs of the Post-9/11 Wars Through FY2019: \$5.9 Trillion Spent and Obligated¹

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November 14, 2018

The United States has appropriated and is obligated to spend an estimated \$5.9 trillion (in current dollars) on the war on terror through Fiscal Year 2019, including direct war and war-related spending and obligations for future spending on post-9/11 war veterans (see Table 1). This number differs substantially from the Pentagon's estimates of the costs of the post-9/11 wars because it includes not only war appropriations made to the Department of Defense – spending in the war zones of Iraq, Syria, Afghanistan, Pakistan, and in other places the government designates as sites of “overseas contingency operations,” – but also includes spending across the federal government that is a consequence of these wars. Specifically, this is war-related spending by the Department of State, past and obligated spending for war veterans' care, interest on the debt incurred to pay for the wars, and the prevention of and response to terrorism by the Department of Homeland Security.

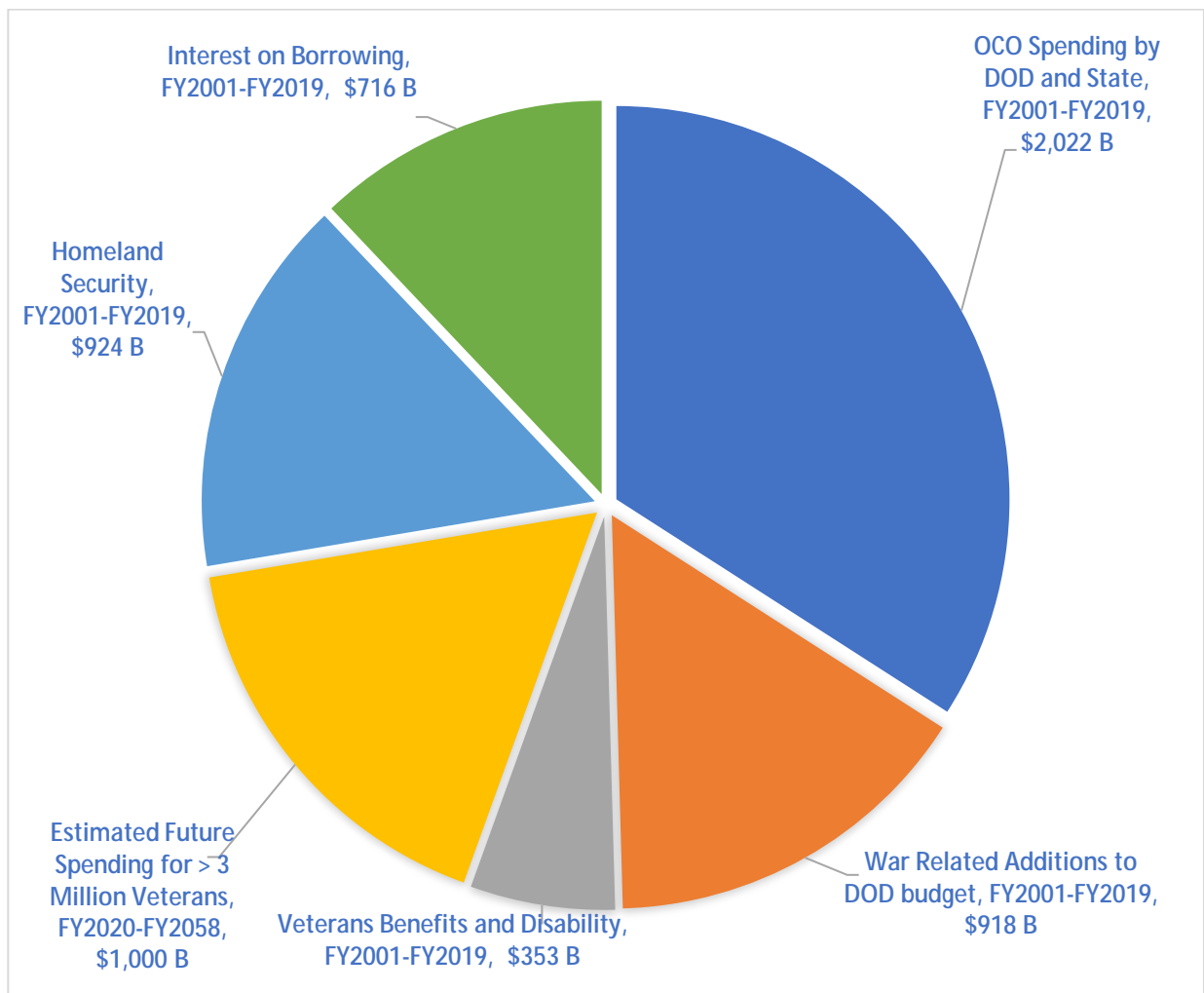
If the US continues on its current path, war spending will continue to grow. The Pentagon currently projects \$80 billion in Overseas Contingency Operations (OCO) spending through FY2023. Even if the wars are ended by 2023, the US would still be on track to spend an additional \$808 billion (see Table 2) to total at least \$6.7 trillion, not including future interest costs. Moreover, the costs of war will likely be greater than this because, unless the US immediately ends its deployments, the number of veterans associated with the post-9/11 wars will also grow. Veterans benefits and disability spending, and the cost of interest on borrowing to pay for the wars, will comprise an increasingly large share of the costs of the US post-9/11 wars.

Table 1, below, summarizes the direct war costs – the OCO budget – and war-related costs through FY2019. These include war-related increases in overall military spending, care for veterans, Homeland Security spending, and interest payments on borrowing for the wars. Including the other areas of war-related spending, the estimate for total US war-related spending allocated through FY2019 is \$4.9 trillion.³ But because the US is contractually and morally obligated to pay for the care of the post-9/11 veterans through their lifetimes, it is prudent to include the costs of care for existing post-9/11 veterans through the next several decades. This means that the US has spent or is obligated to spend \$5.9 trillion in current dollars through FY2019.⁴ Table 1 represents this bottom-line breakdown for spent and obligated costs.

Table 1. Summary of War Related Spending, in Billions of Current Dollars, Rounded to the Nearest Billion, FY2001- FY2019⁵

	\$ Billions
All Overseas Contingency Operations (OCO) Appropriations: DOD (\$1,895 B) and State Department (\$127 B)	\$2,022
Estimated Increase to DOD Base Budget Due to War ⁶	918
Medical and Disability Care for Post-9/11 Veterans ⁷	353
Homeland Security Spending for Prevention and Response to Terrorism ⁸	924
Estimated Interest on Borrowing for OCO (Emergency) Spending	716
Total War Appropriations and War-Related Spending through FY 2019	\$4,933
Estimated Future Obligations for Veterans Medical and Disability FY2020 - FY2059 ⁹	>1,000
Total War-Related Spending and Obligations for Veterans through FY2019	\$5,933 Billion

Figure 1. US Costs of War: \$5.9 Billions of Current Dollars Spent and Obligated, through FY2019¹⁰



Further, the US military has no plans to end the post-9/11 wars in this fiscal year or the next. Rather, as the inclusion of future years spending estimates in the Pentagon’s budget indicates, the DOD anticipates military operations in Afghanistan, Pakistan, Iraq and Syria necessitating funding through at least FY2023. Thus, including anticipated OCO and other war-related spending, and the fact that the post-9/11 veterans will require care for the next several decades, I estimate that through FY2023, the US will spend and take on obligations to spend more than \$6.7 trillion.

Table 2. Projected Estimate of War Spending, in Billions of Current Dollars, Rounded to the Nearest Billion, FY2020-2023

	\$ Billions
Estimated DOD and State OCO Appropriations, FY2020-FY2023 ¹¹	84
Estimated Increase to DOD Base Budget Due to War, FY2020-FY2023 ¹²	24
Estimated Homeland Security Spending, FY2020-FY2023 ¹³	280
Interest on \$1,509 OCO spending, FY2020-FY2023 (\$105 B annually)	420
Projected Additional War-Related Spending FY2020 through FY2023	\$808 Billion

Context

Any policy must be judged on its human and budgetary costs, risks, and benefits, and so policymakers and the public must at least have a good sense of the costs of these wars. But which costs? There are many numbers associated with the US post-9/11 wars: 17 years of fighting; thousands of US soldiers killed and many thousands more injured; hundreds of thousands of civilians killed; millions of refugees; and the costs go on. There is no single number for the budgetary costs of the wars, which make assessing costs, risks, and benefits difficult. Indeed, because the nation has tended to focus its attention only on direct military spending, we have often discounted the larger budgetary costs of the post-9/11 wars and therefore underestimated their greater budgetary and economic significance.

War appropriations for Iraq and Afghanistan were not funded with new taxes or war bonds, but by deficit spending and borrowing. This adds interest costs to war spending, specifically, the interest costs already paid and future interest costs. The severity of the burden of war-related interest payments will depend on many factors, not least, the overall future health of the US economy, interest rates, government fiscal policy, and national saving. In 2011, Dr. Ryan Edwards calculated more than \$7.9 Trillion in cumulative interest through 2056 on war appropriations, capped at \$1.5 Trillion.¹⁴ War spending has increased substantially since then, and the US continues to fund the wars by borrowing, so this is a conservative estimate of the consequences of funding the war as if on a credit card, in which we are only paying interest even as we continue to spend.

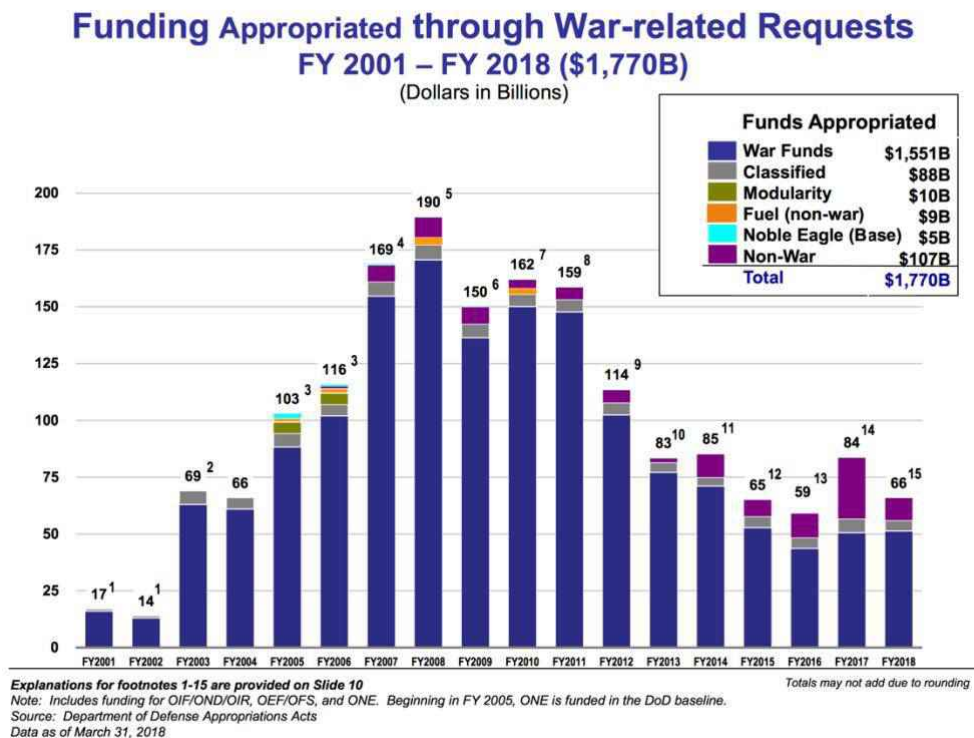
Comparison with Department of Defense Estimates

The Pentagon's accounting of war spending only reports funding for the Department of Defense. This way of calculating the costs of the post-9/11 wars omits other major budgetary costs of the United States' reaction to the 9/11 attacks.

The Pentagon occasionally releases summaries of the costs of the wars. For instance, in March 2018, the United States Department of Defense (DOD) calculated that it had spent \$1.5 Trillion in what it calls "war-related" appropriations since the 9/11 attacks. At that time, the DOD projected that Pentagon war spending on the post-9/11 wars would be \$1.7 Trillion through FY2018, the fiscal year just ended.¹⁵ This number only includes a portion of all total war-related budgeting and war-caused spending.

Figure 2 is a reproduction of the DOD accounting for war-related requests, which looks forward through Fiscal Year 2018.

Figure 2. DOD Representation of Cost of War, March 2018¹⁶



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This figure illustrates several interesting features of the appropriations, for example, the DOD's spending on fuel and classified operations. Yet OCO appropriations for the Pentagon do not convey the full picture. Using the Pentagon numbers for our understanding of the total federal budgetary costs of these wars is thus incomplete and misleading.

In August, the US Congress passed a new defense budget for FY2019, the John S. McCain National Defense Authorization Act. This budget allocates new funds, nearly \$70 billion, for the ongoing post-9/11 wars, the “overseas contingency operations” (OCO).¹⁷

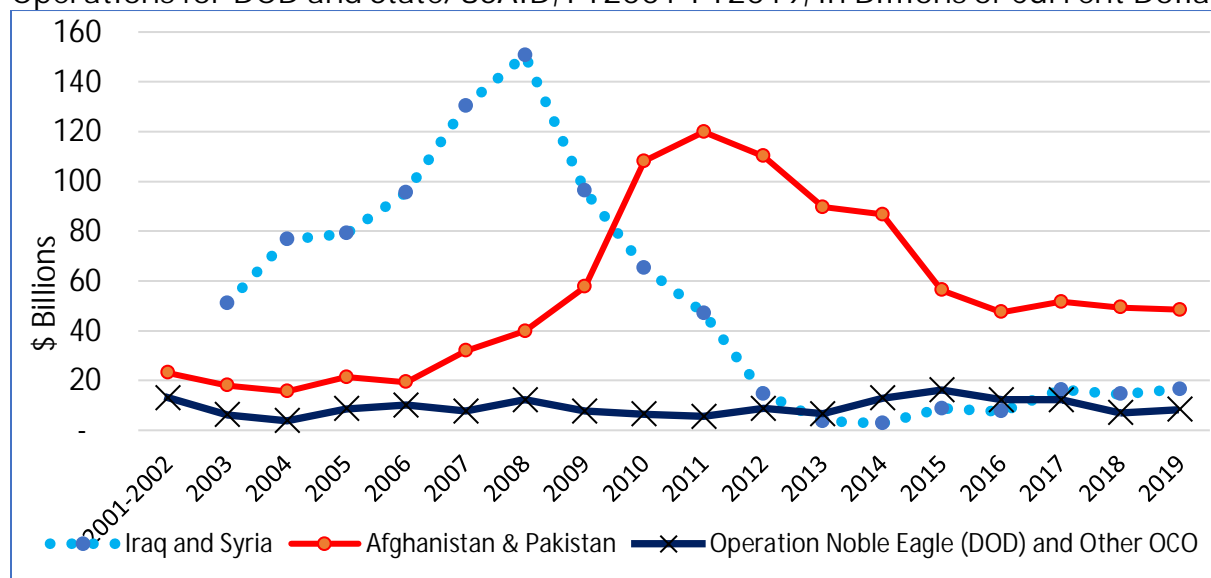
Congress allocates other explicitly war-related spending, specifically OCO spending by the Department of State, which directly supports military operations in the war zones. Table 3 shows spending by both the Department of State and the Department of Defense, allocated for the major war zones and by mission.

Table 3. All Overseas Contingency Operations (OCO) or Emergency Spending, FY 2001-FY2019: Cumulative Appropriations for DOD and State Department/USAID, in Billions of Current Dollars, Rounded to the Nearest Billion¹⁸

War Zone/Operation	Cumulative Total FY2001-FY2019
Iraq (FY2003-FY2019)	\$822
Syria Inherent Resolve (FY2014-FY2019)	54
Afghanistan ¹⁹ (FY2001-FY2019)	975
Pakistan ²⁰ (FY2002-FY2019)	10
Operation Noble Eagle ²¹ (FY2001-FY2019)	23
Other OCO (e.g. in Africa and Europe) and the Bipartisan Budget Act	137
Total	\$2,022 Billion

Figure 3, below, tracks the annual appropriations for each war zone made by the Departments of Defense and State. Spending for Afghanistan and Pakistan has been grouped together here, as has spending on Iraq with that for Syria. Figure 3 also groups the spending on other OCO operations with spending on Operation Noble Eagle.

Figure 3. Annual Appropriations by Major War Zone/Overseas Contingency Operations for DOD and State/USAID, FY2001-FY2019, in Billions of Current Dollars



Future Costs

About a year ago, the late John McCain wondered if, “After 16 years, should the taxpayers of America be satisfied we are in a ‘stalemate’? I don’t think so.”²² The costs of these wars, already high last year, are on track to escalate unless the US changes its strategy. Specifically, there are two major wild cards with regard to future war spending that will affect the ultimate costs of these wars.

➤ First, the choices the United States makes with regard to future war spending and the financing of past war spending:

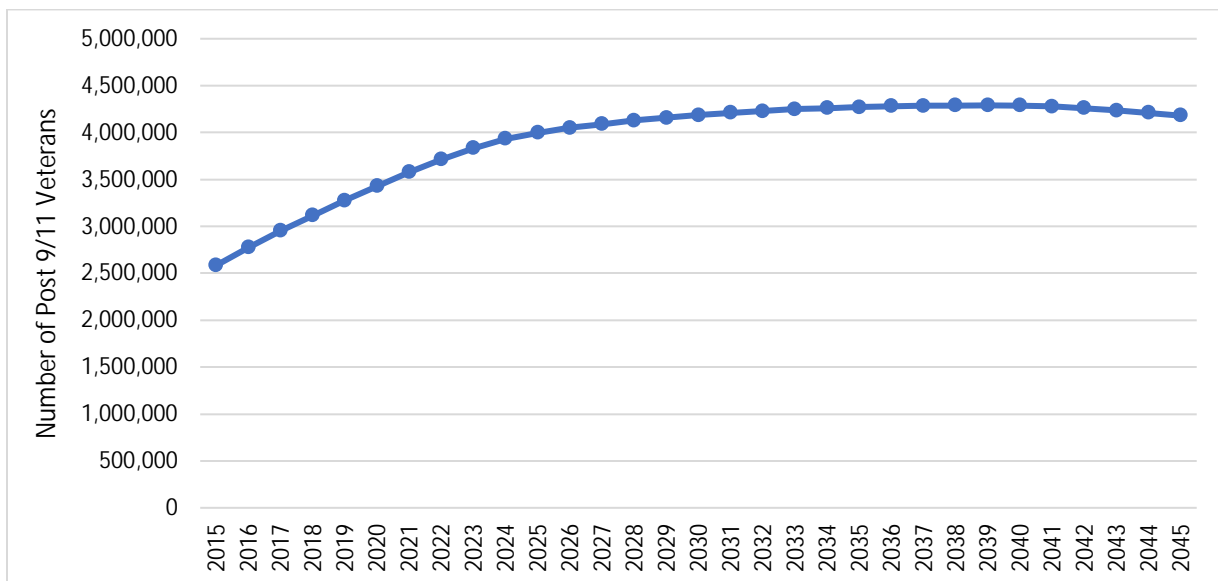
The US could choose to increase taxes to pay for past and future war-related spending. If the US continues deficit spending to fund the wars, the debt will grow, as will the interest payments needed to service the war debt.

➤ Second, how long the US continues the wars:

Duration will determine spending in several respects, including the total spent by the Pentagon and State Department.

As Figure 4, below, illustrates, the Department of Veteran’s Affairs already projects that the number of post-9/11 war veterans will continue to grow for some time, peaking around 2039 at more than 4.3 million people. Moreover, as these veterans age, their health care and disability care needs will increase. Longer wars will also increase the number of soldiers and sailors who will ultimately claim veterans benefits and disability payments.

Figure 4. Post-9/11 Era Veterans, Number Estimated as of September 30 Each Year²³



Discussion and Conclusions

One could argue that the war in Afghanistan is at a stalemate, even as the US is winding down its operations in Iraq and Syria, having ostensibly destroyed much of the threat ISIS posed to the region. Yet there is no strategy to end the wars other than more of the same, in the hope that one day Iraqi and Afghan security forces will be able to fend for themselves. In addition, the US has escalated its involvement with wars and counter terror operations in Africa and Yemen. Nor is there a strategy for responsibly paying for these wars.

Understanding the costs of these wars now and in the future is only one part of an assessment of national strategy and priorities. It is important that the US continue to release data about military spending, veteran's health, and spending on counterterror missions by the Department of Homeland Security so that lawmakers and citizens can make informed choices. We cannot begin to weigh the costs, risks and benefits of these wars, and insure accountability, without transparency about costs.

As the Government Accountability Office has repeatedly shown, this and previous administrations have not made their use of the appropriated funds clear.²⁴ For example, even as this administration has increased military spending, the transparency that is essential for efficiency and democratic accountability has been undermined by cuts in spending for essential auditing and inspector general functions at the State Department and Department of Defense. Consider the comments of the Inspector General of the US Agency for International Development, Ann Calvaresi Barr, on the FY 2019 budget for her office in the most recent State Department budgetary justification.

The amount provided in the FY 2019 President's Budget request is not sufficient for OIG to continue to provide needed audit oversight and support ongoing investigative casework. To sustain oversight activities and properly execute the duties of the office, OIG submitted an initial budget request of \$75.5 million, or \$4 million more than is included in the President's Budget.²⁵

The State Department report then notes that the budget of the Inspector General's office more than pays for itself through the recoveries of taxpayer dollars and the savings that its work makes possible.

OIG's access to other sources of funding, such as funding associated with supplemental appropriations, has declined with the result that if it is provided funding at the levels in the President's Budget request, OIG would need to reduce spending by almost 7 percent. These reductions would, in turn, require OIG to implement significant operational and staff cuts. As a result, OIG would be unable to provide ongoing and planned effective oversight identified in its original request. OIG would not have sufficient resources to provide adequate oversight, for example, of overseas contingency and humanitarian assistance operations, including ongoing investigative priorities or maintain an independent information technology infrastructure. Limitations on OIG resources will, in

turn, have the effect of reducing accountability and exposing foreign assistance programs and activities to greater risks of waste, fraud, and abuse. Finally, funding at this level is very likely to reduce our sustained returns on investment to the Federal Government. Of note, our investigative recoveries and savings in FY 2017 amounted to approximately two times the cost of our operating budget, that is in addition to the many programmatic efficiencies and corrective actions taken as a result of our audit recommendations.²⁶

In other cases, numbers have disappeared from reporting. For instance, since 2017, the White House and Department of Homeland Security have not provided a breakdown of DHS expenditures by the specific missions devoted to post-9/11 counterterrorism. The new accounting does not compare with previous categories making it unclear how much is being spent on counterterror missions.

Similarly, the Special Inspector General for Afghanistan Reconstruction has noted in his most recent report, released on October 30, 2018, that despite pleas by members of Congress, the Department of Defense has become less forthcoming about important indicators of the war in Afghanistan:

As I reported last quarter, in the Joint Explanatory Statement from the Conference Report (H. Rept. 115-863) to accompany H.R. 5515, the John S. McCain National Defense Authorization Act for Fiscal Year 2019, conferees noted that they are disappointed by DOD's lack of transparency about its efforts in Afghanistan. Despite that Congressional concern, DOD this quarter classified even more data for this quarterly report concerning the Afghan National Defense and Security Forces (ANDSF), including the number of women in the forces.²⁷

In other cases, although information is available, it has become more difficult to access it. For example, the Congressional Research Service, which had regularly released an analysis of casualty statistics, has not updated its reports on U.S. casualties in the war zones since August 2015.²⁸ It is possible to gather this information by going through military and VA records, but most member of Congress and the public do not have the time to do this work. Without transparency, the costs, effectiveness and cost-effectiveness of the current strategies of homeland security and war are unclear.

Further, there is no strategy for ending the wars. The fact that the US keeps spending huge sums for wars that, at least in Afghanistan, are in a stalemate, and in Iraq and Syria, are unresolved, is a long-term budgetary problem which will affect future generations. The government's pattern of reporting only DOD war spending obscures the magnitude of spending since 9/11. The comprehensive analysis of post-9/11 federal war and war related spending conducted by the Costs of War Project is only one part of a greater assessment of the impact of these wars.²⁹ The US economy will, in the long run, find it difficult to sustain this level of military and war-related spending and the deficits it produces.

Finally, as I have emphasized in previous reports, the base budget for the Pentagon has remained high even when the US decreases war spending. Indeed, the larger defense budget has largely escaped critical analysis since the 9/11 attacks. The Congress' attitude almost seems to be that the Pentagon deserves whatever funding they ask for, no matter the cost, and regardless of whether or not this spending is efficient or wise.³⁰

Far from being a wise and prudential use of human and budgetary resources, US national security strategy may be undermining America's immediate and long-term security. Since 9/11 the US has had a military that is more than adequate for the defense of the homeland and US allies from terrorist attack. The high level of spending on war and other military preparations may not be in proportion to the threats the US faces. When coupled with the aggressive rhetoric that has characterized US foreign policy in recent years, these high levels of spending and the expanding footprint of US counterterror operations across the globe may be very alarming to states and peoples who would otherwise not have reason to increase their own military spending and armed forces.

High levels of mobilization also pose an opportunity cost, leaving domestic priorities underfunded, and taking resources away from threats that are certain to materialize. The United States and the rest of the world do face grave security, economic and survival threats in the present and future from climate change caused by greenhouse gas emissions.³¹ Current spending on war and fuel use will only diminish the capacity of the US to develop resiliency and reduce green-house gas emissions.

Many of the threats posed by climate change can best be addressed by prevention, namely the reduction of greenhouse gas emissions, and not by military force. Because of the enormous fuel use of an organization that operates 24 hours a day all over the globe, the Department of Defense is the largest single user of oil and other petroleum products in the world. Between 2010 and 2015, the DOD purchased an average of 102 million barrels of fuel per year. The Pentagon thus emitted an average of 44 million metric tons of CO₂ per year for this period.³² This makes it one of the largest sources of greenhouse gases in the United States.³³ Previous administrations and members of Congress have recognized the danger that climate change poses. Yet, in its most recent National Security Strategy, the Trump administration ignored climate change. In response, more than 100 members of Congress wrote the President in January 2018 to underscore the risks, and to ask the President to include climate change in the National Security Strategy.³⁴ The impulse to bury our heads in the sand and bury information about climate change cannot be reconciled with the immediate and future risks and costs posed by the consequences of climate change. Reports by the US National Intelligence Council in 2016 and by the Intergovernmental Panel on Climate Change the October 2018 make this clear.³⁵

In sum, high costs in war and war-related spending pose a national security concern because they are unsustainable. The public would be better served by increased transparency and by the development of a comprehensive strategy to end the wars and deal with other urgent national security priorities.

¹ This updates Neta C. Crawford, "[US Costs of Wars through FY2018: A Summary of the \\$5.6 Trillion in Costs for the US Wars in Iraq, Syria, Afghanistan and Pakistan, and Post-9/11 Veterans Care and Homeland Security](#)" (November 2017), which included a detailed discussion of my sources and methods, and Neta C. Crawford, "[US Costs of Wars Through 2014: \\$4.4 Trillion and Counting. Summary of Costs for the US Wars in Iraq, Afghanistan and Pakistan](#)" (June 2014). In June 2014, I reported the costs of the major wars and Operation Noble Eagle, including OCO, homeland security, veterans, future obligations and interest on borrowing to pay for the wars through 2014 was about \$4.4 Trillion.

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³ In current dollars, rounding to the nearest trillion.

⁴ Last year I estimated the total spent and obligated through FY 2018 was \$5.6 Trillion in current dollars.

⁵ Rounded to the nearest \$billion. Table 1, which summarizes spending by category, is based on publicly available documents. Sources: Belasco, Amy. (2014, December 8). The Cost of Iraq, Afghanistan, and Other Global War on Terror Operations Since 9/11. Congressional Research Service (CRS).; Office of the Under Secretary of Defense (Comptroller) Chief Financial Officer. (2018, February 13). Defense Budget Overview. Retrieved from https://comptroller.defense.gov/Portals/45/Documents/defbudget/fy2019/FY2019_Budget_Request_Overview_Book.pdf; State Department Budget Justifications, including <https://www.state.gov/documents/organization/279517.pdf>; Pakistan, Kronstadt, K. Alan and Epstein, Susan B. (2017, November 28). Direct Overt U.S. Aid Appropriations for and Military Reimbursements to Pakistan, FY 2002-FY2018.

Numbers for some spending categories are necessarily estimates: at the time of this writing, the FY 2019 budget had been passed and signed for the Department of Defense but not for all the other categories of spending. My estimates for spending where there are no current data are rooted in past spending by the respective department. Some government departments have become less transparent. The Department of Veterans Affairs and the Department of Homeland Security have aggregated some of their Global War on Terror/Post-9/11 related spending so that it is more difficult to isolate specific war-related spending from their larger budgets.

⁶ Estimated as a portion of the OCO budget. These include additional expenses which have increased the size of the "base" budget, such as, after 2004, spending on Operation Noble Eagle, increased healthcare costs for active duty soldiers, and higher pay associated with the desire to attract and retain soldiers during the long wars.

⁷ Based on Department of Veterans Affairs Budgets.

⁸ The Whitehouse and Department of Homeland Security have not, since 2017, provided a breakdown of DHS expenditures by missions devoted to post-9/11 counterterrorism. The DHS has reorganized its reporting on spending. My estimate is based previous DHS spending on counterterror missions. In 2017, White House Office of Management and Budget stated in its most recent Analytical Perspectives on the budget that, "Previous Analytical Perspectives volumes included a 'Homeland Security Funding Analysis' chapter, and provided additional detailed information on the Internet address cited above and on the Budget CD-ROM. P.L. 115-31 eliminated the statutory requirement for this information. Therefore, this information is not included in this years' Budget and it will not be included in future Budgets." Office of Management and Budget, (2017). Analytical Perspectives: Budget of the U.S. Government, Fiscal Year 2018. Washington, DC: U.S. Government Printing Office.

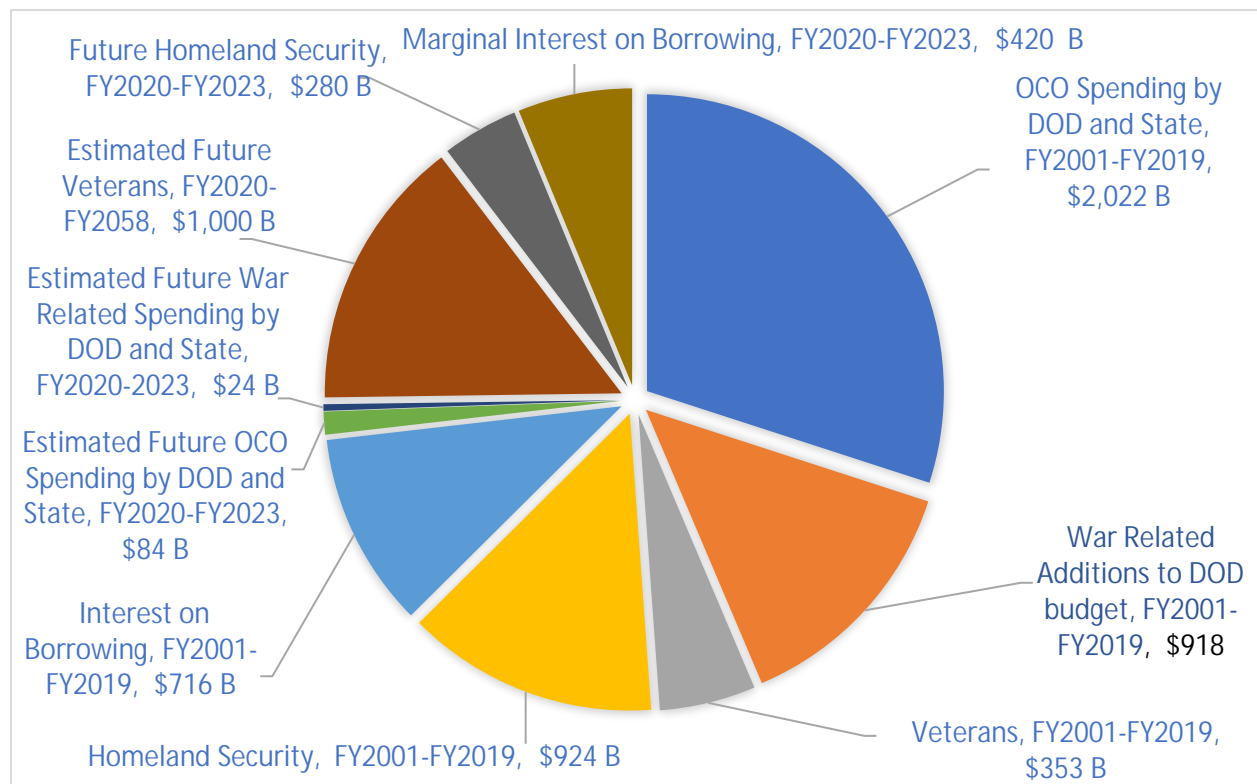
https://www.whitehouse.gov/omb/budget/Analytical_Perspectives.

⁹ Based on Bilmes, Linda J. (Witner 2016). A Trust Fund for Veterans. Democracy: A Journal of Ideas, no. 39. Retrieved from <http://democracyjournal.org/magazine/39/a-trust-fund-for-veterans/> and

Bilmes, Linda J. (2013, March). The Financial Legacy of Iraq and Afghanistan: How Wartime Spending Decisions Will Cancel Out the Peace Dividend. *Costs of War*, <http://watson.brown.edu/costsofwar/files/cow/imce/papers/2013/The%20Financial%20Legacy%20of%20Iraq%20and%20Afghanistan.pdf>. for a discussion of her methods and assumptions.

¹⁰ The additions projected by the Pentagon and this author for FY2020-2023 and the costs for FY2001-2019 are represented in Figure 5 here.

Figure 5. Current and Likely Future US Spending on the Post-9/11 Wars, in Billions of Current Dollars



¹¹ DOD will request \$20 billion annually for FY2020-FY2023. U.S. Department of Defense Office of the Under Secretary of Defense (Comptroller) Chief Financial Officer. (2018, February 13). *Defense Budget Overview*. Retrieved from https://comptroller.defense.gov/Portals/45/Documents/defbudget/fy2019/FY2019_Budget_Request_Overview_Book.pdf and DOD, Outyear estimates from the Department of Defense Office of the Under Secretary of Defense (Comptroller). (2018, April). *National Defense Budget Estimates for FY 2019 (Green Book)*. Retrieved from https://comptroller.defense.gov/Portals/45/Documents/defbudget/fy2019/FY19_Green_Book.pdf For State, assuming that, consistent with recent years, the State Department OCO budget is about 5% of the DOD budget.

¹² Estimating war-related additions to the Pentagon base budget at 30% of OCO spending for FY2020-FY2023.

¹³ Based on previous year's DHS spending.

¹⁴ As estimated by Ryan Edwards and rounded to the nearest \$100 billion. See Edwards, Ryan D. (2011, June). [Post-9/11 War Spending, Debt, and the Macroeconomy](#). *Costs of War*.

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- ¹⁵ Department of Defense, Cost of War Update as of March 31, 2018. Retrieved from <https://fas.org/man/eprint/cow/fy2018q2.pdf>.
- ¹⁶ Department of Defense. Cost of War Update as of March 31, 2018. (p. 9).
- ¹⁷ See H.R. 5515, now PL 115-232. <https://www.congress.gov/bill/115th-congress/house-bill/5515/text>.
- ¹⁸ Totals may not add due to rounding.
- ¹⁹ Includes Coalition Support Funds for Pakistan.
- ²⁰ This figure includes only US security-related funding that is not for Coalition Support Funds (CSF). CSF are part of the OCO spending for operations in Afghanistan. Both the DOD and State Department receive other OCO funding for Pakistan. For accounting purposes, I have counted these appropriations under the State Department although this is not entirely accurate. For example, the largest single element of aid to Pakistan is Foreign Military Financing (FMF), a State Department appropriation for Foreign Operations that is managed by the Department of Defense. The next largest element of spending is the Pakistan Counterinsurgency Fund and the Pakistan Counterinsurgency Capability Fund; the former is overseen by the Pentagon, and the latter by the State Department. And smaller funds for Counternarcotics are Pentagon appropriations. For a complete breakdown and explanation, see Kronstadt and Epstein. (2018). Direct Overt U.S. Aid Appropriations for and Military Reimbursements to Pakistan, FY 2002-FY2018.
- ²¹ Operation Noble Eagle (ONE), begun on 9/11, includes the enhanced security for military bases and US airspace provided by the US military in the DOD budget. ONE was transferred to the Base Budget in 2005. I include it in my estimate of OCO spending through FY2004.
- ²² Senator John McCain, quoted in Grisales, Claudia. (2017, October 3). Senators Grill Mattis, Dunford on War Strategy in Afghanistan. Stars and Stripes. Retrieved from <https://www.stripes.com/news/us/senators-grill-mattis-dunford-on-war-strategy-in-afghanistan-1.490741#.WeOudxNSzUJ>.
- ²³ Source: Department of Veterans Affairs, [https://www.va.gov/vetdata/Veteran Population.asp](https://www.va.gov/vetdata/Veteran%20Population.asp).
- ²⁴ See, for instance, the U.S. Government Accountability Office, January 10, 2018 report to John McCain, Jack Reed, Mac Thornberry, and Adam Smith. Defense Budget: Obligations of Overseas Contingency Operations Funding for Operation and Maintenance Base Requirements. Retrieved from <https://www.gao.gov/assets/690/689343.pdf>.
- ²⁵ Department of State. (2018, February 10). Congressional Budget Justification, Department of State, Foreign Operations and Related Programs, Fiscal Year 2019. (p. 81). Retrieved from <https://www.state.gov/documents/organization/277155.pdf>.
- ²⁶ Department of State. (2018, February 10). Congressional Budget Justification, Department of State, Foreign Operations and Related Programs, Fiscal Year 2019. (p. 81). Retrieved from <https://www.state.gov/documents/organization/277155.pdf>.
- ²⁷ Special Inspector General for Afghanistan Reconstruction. (2018, October 30). Quarterly Report to the United States Congress. Retrieved from <https://www.sigar.mil/pdf/quarterlyreports/2018-10-30qr.pdf>.
- ²⁸ Fischer, Hannah. (2015, August 7). A Guide to U.S. Military Casualty Statistics: Operation's Freedom's Sentinel, Operation Inherent Resolve, Operation New Dawn, Operation Iraqi Freedom, and Operation Enduring Freedom. Congressional Research Service, RS22452.
- ²⁹ This estimate does not include every budgetary cost of these wars (for example, we do not include here all the local and state government costs associated with caring for post-9/11 war veterans).
- ³⁰ An interesting recent analysis is Harris, Todd and Daniels, Seamus. (2018, September). Analysis of the FY2019 Defense Budget. Center for Strategic and International Studies (New York: Rowman & Littlefield).

³¹ See, for instance, Campbell, Kurt, et al. (2007, November). The Age of Consequences: The Foreign Policy and National Security Implications of Global Climate Change (CSIS/CNAS). Retrieved from <https://www.csis.org/analysis/age-consequences>.

³² United States General Accountability Office. (2016, September). Bulk Fuel: Actions Needed to Improve DOD's Fuel Consumption Budget Data (GAO-16-664). (p. 9). Carbon emissions per barrel of oil are 0.43 metric tons. See US Environmental Protection Agency, Greenhouse Gases Equivalencies Calculator, <https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references>.

³³ US Environmental Protection Agency. (2017). Inventory of Greenhouse Gas Emissions and Sinks: 1990-2015. Retrieved from <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2015>.

³⁴ The letter is found at https://langevin.house.gov/sites/langevin.house.gov/files/documents/01-11-18_Langevin_Stefanik_Letter_to_POTUS_Climate_Change_National_Security_Strategy.pdf.

³⁵ U.S. National Intelligence Council, "Implications for U.S. National Security of Anticipated Climate Change," 21 September 2016, NIC WP 2016-1, which appears to have been deleted from the web by the administration. See a summary of the most recent Intergovernmental Panel on Climate Change findings at https://www.ipcc.ch/news_and_events/pr_outreach_vietnam_2018.shtml.