# How Government Spending Differs Depending on the Political Party in Power

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Winter 2019

## 1. Abstract

It's commonly known in politics that the two political parties of the United States, Democrats and Republicans, have different priorities when it comes to government spending. Using data from USAspending.gov we aim to analyze whether there are changes in spending habits in certain government sectors based on the party in control of the US House of Representatives, Senate, or Presidency. We find that there are differences in government spending based on the party in power, but our conclusions are not concrete.

## 2. Political Differences

In US politics, there is an assumption that certain political parties have different priorities on how to spend government money. Democrats typically want to spend more money on health and social programs, and want to spend more money in general. Republicans usually want to spend less money, and spend it on the military or national security. Since there are three separate bodies in the US government that must approve spending (the House of Representatives, the Senate, and the Presidency), then a certain political party in control (as in, have a majority in a particular body) of a combination of these three bodies will influence the type of government spending.

We will investigate how government spending differs based on the parties in power. We predict that different combinations of political party control will change government spending. For example, political gridlock, where different combinations of parties have control of different bodies, will lead to moderate spending across the board to accommodate everyone's preferences, while a single party controlling all three bodies will lead to increased spending in certain areas and decreased spending in others. We find that government spending does indeed shift around in certain areas depending on the party in power, but these changes are hard to diagnose because the data limits our analysis.

## 3. Data, Methods, and Technologies

We used the government spending data from USAspending.gov that Professor Fitzgerald turned into a SQLite database, available on the class cluster. It's important to first note that we use the word "spending" to loosely mean "obligation," which is defined on the USAspending.gov website as money money the government spent and money the government will spend. This definition includes things like contracts, grants, or some other method of promising to pay money in the future. Each transaction is called an "award."

### A. Retrieving Spending Amounts

The universal_transaction_matview table in the database keeps the records of the transactions and modifications of the awards, which we considered using to get our data for spending amounts. However, there are many duplicates. We queried the duplicates under the assumption that the dates, agencies, and amounts would be the same, and found that the duplicates usually occur when generated_pragmatic_obligations are different, which would be helpful in removing duplicates. However, the summary data from the seemingly distinct transactions does not add up (we cannot sum them), so we decided to use the awards table instead.

We queried the annual spending per fiscal year for every unique agency from the awards table and saved it as a .csv, which we will use later.

### B. Agency Functions

All the government transactions are listed based on the government agency that spent or will spend the money. To figure out how different the two parties spend money, we needed to group these agencies based on their "function," or the agencies' main focus, whether it be health, education, or defense. Each agency in the agency table has a pointer pointing to the toptier_agency table: the top-tier agency is a "higher" agency that overlooks the regular agencies. In the toptier_agency table are the 157 agencies we needed to categorize.

We used the United Nations Statistics Division "Classification of the Functions of Government," or COFOG, to classify the top-tier agencies. The ten functions are: 1) General public services; 2) Defense; 3) Public order and safety; 4) Economic affairs; 5) Environmental protection; 6) Housing and community amenities; 7) Health; 8) Recreation, culture, and religion; 9) Education; and 10) Social protection.

From the SQLite database we queried the relevant toptier_agency information and saved is as a .csv. We manually labeled each agency based on the standards in the International Monetary Fund's Government Finance Statistics Manual; while this method seems primitive, the only alternative would've been to use the mission statement from each agency to deduce its function. The problem is that only 89 out of the 157 (about 57%) top-tier agencies have mission statements, so we would have had to manually label them anyways.

With the annual spending data from earlier and the top-tier agency information, we read them into Pandas dataframes in Python in a Jupyter notebook. We combined these two dataframes to have a single dataframe with annual spending per unique agency, including information about the top-tier agency and each agency's function.

## 4. Initial Observations

Taking a brief look at the total government spending per year, it's clear that spending has risen. From Figure 1, we see that while there are several dips in spending over a couple years, the overall trend is upwards. Note that we did not include spending in 2000 and 2018 in this particular figure because the data from these years were incomplete. But it seems that

data is missing in the earlier years of Figure 1: government spending is usually linear, because even the government cannot conjure about multiple times more money than they had the previous year, so there should be no spikes in spending. However, there is a sudden increase, almost ninety-degrees upwards, in spending after 2006.

Looking at Figure 2, we see the same thing with the missing data: defense spending is unusually high, and it drops dramatically in 2006. We found that the data before 2009 seems to be incomplete, because the total spending was below 1.5 trillion before 2009. Based on Figure 3, we know that government spending was much higher than 1.5 trillion before 2009. Moving forward, we focused on data from 2009 and onwards.

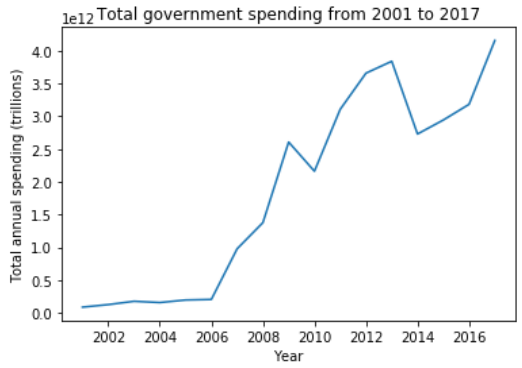


*Figure 1*. Total US government spending, or "total obligations," from 2001 to 2017. *Note*. Data is incomplete.

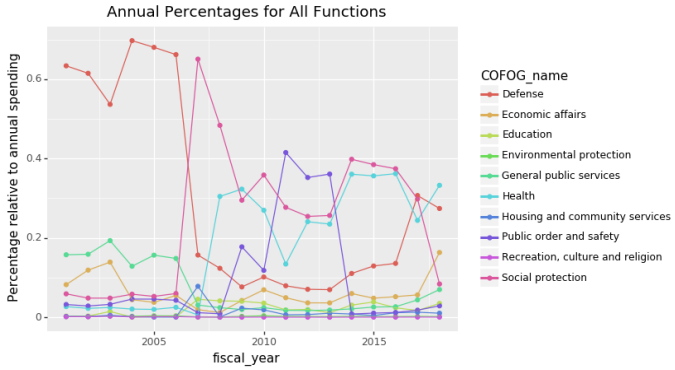


*Figure 2*. Percentage of US government spending per function from 2001 to 2018. *Note*. Data is incomplete.

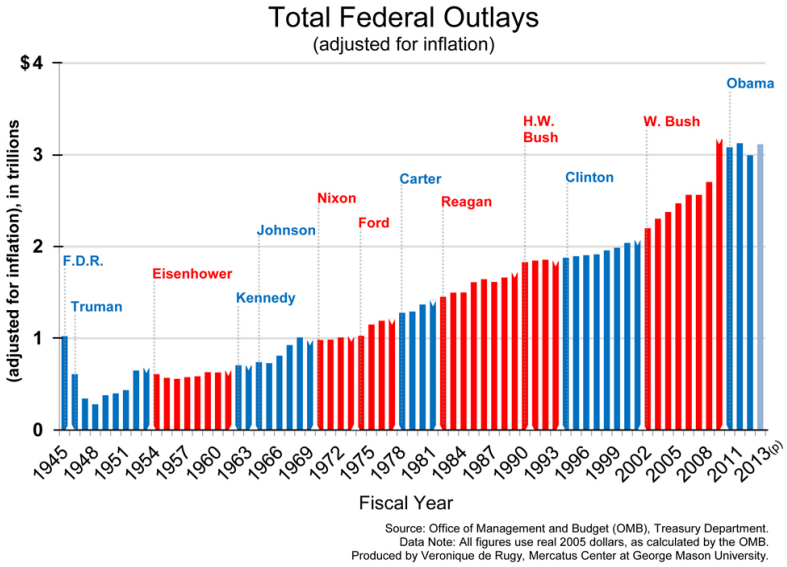


*Figure 3*. Total US government spending from 1945 to 2013.

## 5. In-Depth Results

Now we dive a little deeper into the data. We chose the most noticeable and interesting categories for Figure 5, including defense, economic affairs, general public services, public order and safety, health, and social protection. See Figure 4 for reference on which parties are in control of which government body.

| year | house | senate | president |
|---|---|---|---|
| 2009 | D | D | D |
| 2010 | D | D | D |
| 2011 | R | D | D |
| 2012 | R | D | D |
| 2013 | R | D | D |
| 2014 | R | D | D |
| 2015 | R | R | D |
| 2016 | R | R | D |
| 2017 | R | R | R |
| 2018 | R | R | R |

*Figure 4*. Party control of the House, Senate, and Presidency.

*Note*. D means Democrat. R means Republican.

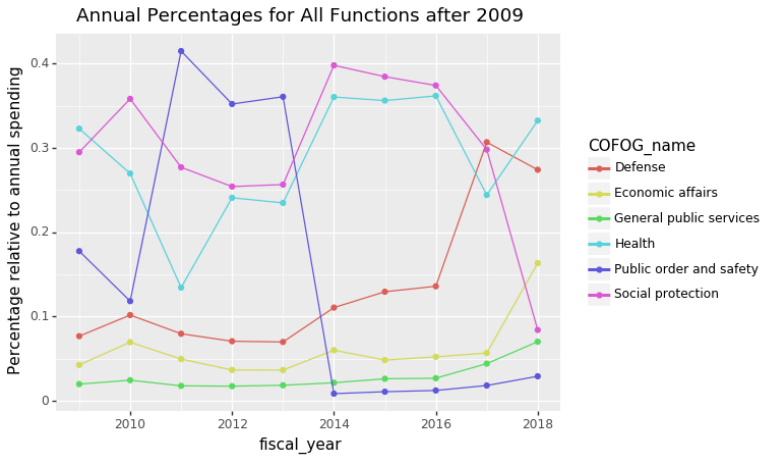


*Figure 5*. Percentage of US government spending per function from 2009 to 2018.

From 2009 to 2010, Democrats have full control of the House, Senate, and Presidency, although, there isn't anything remarkable about spending. There is an increase in social protection, decreases in health and public order and safety, and moderate increases everywhere else.

From 2011 to 2014, when Republicans have the House and Democrats have the Senate and Presidency, there is a very large drop in public order and safety (possibly due to some missing data), increase in health, and little changes everywhere else.

From 2015 to 2016, when Republicans have the House and Senate and Democrats have the Presidency, there are no dramatic changes in spending at all; only very minor increases and decreases that appear negligible.

From 2017 to 2018, when Republicans hold all three bodies, things get interesting: defense spending and economic affairs increases, and social protection and health decreases. These results are what we would typically expect from full Republican control.

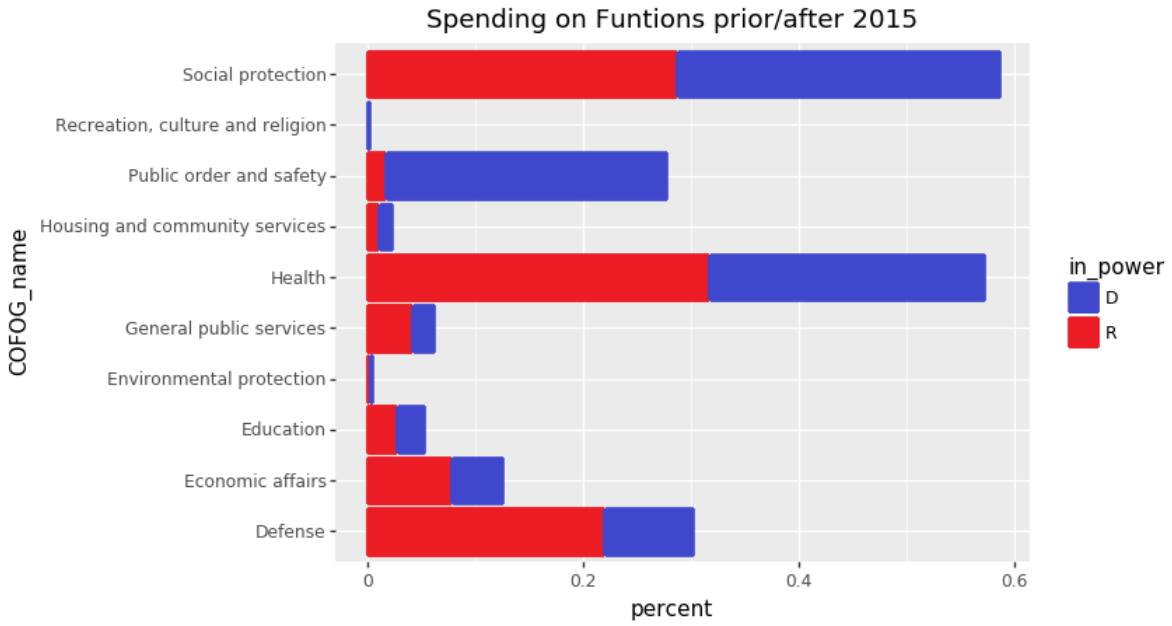


*Figure 6*. Percentage of US government spending per function before 2015 and during/after 2015, where there is a shift from Democrat control to Republican control.

Prior to 2015, Democrats held a "majority" out of the three bodies (House, Senate, Presidency). (Majority, as in, 2 out of 3 bodies. This is to simplify things.) Starting in 2015 and onwards, Republicans held a majority. Looking at Figure 6, it's clear that there's a difference in the spending percentages based on which party is in power. Democrats spend slightly more on social protection, housing and community services, and environmental protection, and a lot more on public order and safety (although, the difference may be because of missing data). Republicans spend more on defense and economic affairs, and interestingly, slightly more on health and general public services than Democrats. Both parties spend about the same on education.

All of these differences between the parties can easily be justified. The data seems clear that there are different priorities between the two political parties. Anyone who has a historical and political understanding of the differences between Democrats and Republicans knows that the differences in spending align pretty well to what each party prioritizes in its platform. We won't go into the details of the stances of each party, as we already mentioned it briefly in the introduction and it is out of the scope of this report.

## 6. Differences in Government Spending Depending on the Party

Now, it's not really fair or correct to say definitively that a political party spends certain money on certain things, simply because they have 2 out of 3 in the House, Senate, and Presidency. There are many moving parts in the government, and a simple 2 out of 3, or even 3 out of 3, will not guarantee total control over the budget. Passing the budget must go through each one of the House, Senate, and Presidency, so having more is definitely better, but it's not the determining factor in what gets approved in the budget.

We cannot draw strong conclusions about the nature of government spending because we don't have enough data. Politics moves fast. Everyday there's a news story, and political parties change their opinions on things all the time. We used annual spending amounts in the last ten years, but go back another ten years and government spending is a whole different game. There are so many factors apart from the political party in the House, Senate, or Presidency that influence how the government spends money, like war, emergencies, and other bipartisan issues that have nothing to do with the party in power.

What we can say, though, is that there are differences in how the government spends money depending on who controls the House, Senate, and Presidency. The percentage of spending in certain functions of government is different based on the majority party. The differences are clear and can be justified based on our understanding of each party. Are these differences in spending because of the power dynamics in Washington? Possibly. It's impossible to know. There are lots of moving parts in politics. We've observed the differences: a mere first step in understanding the role of political parts in the functions of government.

## 7. Sources

USAspending Data:
https://www.usaspending.gov/#/
Classification of the Functions of Government:
https://en.wikipedia.org/wiki/Classification_of_the_Functions_of_Government
Standards of Classification:
https://www.imf.org/external/pubs/ft/gfs/manual/pdf/ch6ann.pdf
Parties in power:
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Total government spending figure:
https://www.mercatus.org/publication/high-levels-government-spending-become-status-quo