Permanent employees analysis

Andrew Ba Tran

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This analysis seeks to compare the body count of federal employees for President Trump's first nine months in office (That's the most recent data currently available) compared to President Obama in that same time frame.

It was part of the story: How the Trump era is changing federal bureaucracy (https://www.washingtonpost.com/politics/how-the-trump-era-is-changing-the-federal-bureaucracy/2017/12/30/8d5149c6-daa7-11e7-b859-fb0995360725_story.html).

Other data and analysis scripts can be found in the **wpinvestigative (https://github.com/wpinvestigative /federal_employees_trump_2017)** Github repo.

The analysis for this story is based on raw data from the U.S. Office of Personnel Managament Employment Cubes (https://www.opm.gov/Data/) and seeks to focus on permanent employees (so excluding seasonal and appointed positions) in an effort to normalize the figures.

```r
# Loading libraries
library(tidyverse)
library(readr)
library(lubridate)
library(knitr)
library(DT)

# Downloading Trump's December raw data (12/2016)
# The raw employment figures is more than 100 mb so it cannot be uploaded to Github

if (!file.exists("data/employment/2016-12/FACTDATA_DEC2016.TXT")) {
  trump_dec_dir <- "data/employment/2016-12"
  dir.create(trump_dec_dir, showWarnings = F)
  temp <- tempfile()
  download.file("https://www.opm.gov/Data/Files/491/17cace4b-452f-46c7-9274-fb7e16b67a81.zip",temp)
  unzip(temp, exdir=trump_dec_dir, overwrite=T)
  unlink(temp)
}

# Importing Trump's December raw data
dec_16 <- read.table("data/employment/2016-12/FACTDATA_DEC2016.txt", header= TRUE, sep = ",", quote = "\"")

# Bringing in agency and department data
dtagy_dec_16 <- read.table("data/employment/2016-12/DTagy.txt", header= TRUE, sep = ",", quote = "\"") #agency info table

# Bringing in work status data
wkstat_dec_16 <- read.table("data/employment/2016-12/DTwkstat.txt", header= TRUE, sep = ",", quote = "\"")

# Joining the raw data with the supplemental tables
dec_16 <- left_join(dec_16, dtagy_dec_16)
dec_16 <- left_join(dec_16, wkstat_dec_16)

# Creating a new column with just the first two letters in the department abbreviation (makes it
easier to join with data later on)
dec_16$two <- substr(dec_16$AGYT, 0, 2)

# Cleaning up the department names
dec_16$AGYT <- gsub(".*-", "", dec_16$AGYT)
dec_16$AGYSUBT <- gsub(".*-", "", dec_16$AGYSUBT)

# Prepping the data for December to be joined with the most-recent September data
dec_16_filtered <- dec_16 %>%
# Filter the permanent classification for employees
    filter(TOA=="10" |
          TOA=="15" |
          TOA=="30" |
          TOA=="32" |
          TOA=="35" |
          TOA=="36" |
          TOA=="38" |
          TOA=="50" |
          TOA=="55") %>%
  select(AGYSUB, LOC, OCC, PATCO, PPGRD, GSEGRD, SALLVL, WORKSCH, TOA,  AGELVL, LOSLVL, EMPLOYMEN
```

```
T,
          LOS, AGYSUBT, AGYT, AGYTYPT, two) %>%
  mutate(Date="December",President="Trump" )


# This isn't being displayed but this calculates the same as the above but with no filter
dec_16_raw <- dec_16 %>%
  select(AGYSUB, LOC, OCC, PATCO, PPGRD, GSEGRD, SALLVL, WORKSCH, TOA,  AGELVL, LOSLVL, EMPLOYMEN
T,
          LOS, AGYSUBT, AGYT, AGYTYPT, two) %>%
  mutate(Date="December",President="Trump" )



# Downloading Trump's September raw data (09/2017)

if (!file.exists("data/employment/2017-9/FACTDATA_SEP2017.TXT")) {
  trump_sep_dir <- "data/employment/2017-9"
  dir.create(trump_sep_dir, showWarnings = F)
  temp <- tempfile()
  download.file("https://www.opm.gov/Data/Files/522/7a0bf199-6c16-4131-92d1-485b18f7878a.zip",tem
p)
  unzip(temp, exdir=trump_sep_dir, overwrite=T)
  unlink(temp)
}


# Bringing in September for Trump data
sep_17 <- read.table("data/employment/2017-9/FACTDATA_SEP2017.txt", header= TRUE, sep = ",", quot
e = "\"")

# Bringing in department/agency data
dtagy_sep_17 <- read.table("data/employment/2017-9/DTagy.txt", header= TRUE, sep = ",", quote =
"\"")

# Bringing in work status data
wkstat_sep_17 <- read.table("data/employment/2017-9/DTwkstat.txt", header= TRUE, sep = ",", quote
= "\"")

sep_17 <- left_join(sep_17, dtagy_sep_17)
sep_17 <- left_join(sep_17, wkstat_sep_17)

# Creating a new column with just the first two letters in the department abbreviation (makes it
easier to join with data later on)
sep_17$two <- substr(sep_17$AGYT, 0, 2)

# Cleaning up the department/agency names
sep_17$AGYT <- gsub(".*-", "", sep_17$AGYT)
sep_17$AGYSUBT <- gsub(".*-", "", sep_17$AGYSUBT)

# Prepping the data for September to be joined with the December data
sep_17_filtered <- sep_17 %>%
# Filter the permanent classification for employees
  filter(TOA=="10" |
          TOA=="15" |
          TOA=="30" |
          TOA=="32" |
          TOA=="35" |
          TOA=="36" |
```

```
            TOA=="38" |
            TOA=="50" |
            TOA=="55") %>%
  select(AGYSUB, LOC, OCC, PATCO, PPGRD, GSEGRD, SALLVL, WORKSCH, TOA,  AGELVL, LOSLVL, EMPLOYMEN
T,
         LOS, AGYSUBT, AGYT, AGYTYPT, two) %>%
  mutate(Date="September",President="Trump" )

# Unfiltered table just because
sep_17_raw <- sep_17 %>%
  select(AGYSUB, LOC, OCC, PATCO, PPGRD, GSEGRD, SALLVL, WORKSCH, TOA,  AGELVL, LOSLVL, EMPLOYMEN
T,
         LOS, AGYSUBT, AGYT, AGYTYPT, two) %>%
  mutate(Date="September",President="Trump" )

# Downloading Obama's December raw data (12/2008)

if (!file.exists("data/employment/2008-12/FACTDATA_Dec2008.TXT")) {
  obama_dec_dir <- "data/employment/2008-12"
  dir.create(obama_dec_dir, showWarnings = F)
  temp <- tempfile()
  download.file("https://web.archive.org/web/20150610051705/www.opm.gov/Data/Files/35/53fbe0c4-7d
12-4ebe-8035-bd1e3507fe27.zip",temp)
  unzip(temp, exdir=obama_dec_dir, overwrite=T)
  unlink(temp)
}

# Bringing in December for Obama data
# NOTE: The data set for this was different from the other data sets in that it was fixed width
# instead of read.table() we use read_fwf()

dec_08 <- read_fwf(
  file="data/employment/2008-12/FACTDATA_Dec2008.TXT",
  fwf_widths(c(4,2,4,1,5,2,1,1,2,1,1,1,1,7,5)))

# Setting up the column names
colnames(dec_08) <- c("AGYSUB", "LOC", "OCC", "PATCO", "PPGRD", "GSEGRD", "SALLVL", "WORKSCH", "T
OA", "GENDER", "AGELVL", "LOSLVL", "EMPLOYMENT", "SALARY", "LOS")

# Creating a new column based on the Permanent designations
dec_08$type <- ifelse(dec_08$TOA=="10" |
                      dec_08$TOA=="15" |
                      dec_08$TOA=="30" |
                      dec_08$TOA=="32" |
                        dec_08$TOA=="36" |
                        dec_08$TOA=="38" |
                        dec_08$TOA=="50" |
                        dec_08$TOA=="55", "Permanent", "Nope")

# Bringing in agency identification data
dtagy_dec_08 <- read_fwf(
  file="data/employment/2008-12/Tagysub.txt",
  fwf_widths(c(2,2, 4,1,NA)))

# Setting up the column names
colnames(dtagy_dec_08) <- c("AGY", "Number", "AGYSUB", "Extra", "AGYSUBT")
```

```r
# Deleting an extra column
dtagy_dec_08$Extra <- NULL

# Joining the raw December 2008 data with the supllemental agency info data
dec_08 <- left_join(dec_08, dtagy_dec_08)

# Downloading Obama's September raw data (9/2009)

if (!file.exists("data/employment/2009-9/FACTDATA_SEP2009.TXT")) {
  obama_sep_dir <- "data/employment/2009-9"
  dir.create(obama_sep_dir, showWarnings = F)
  temp <- tempfile()
  download.file("https://www.opm.gov/Data/Files/26/f0a8eef6-a0b5-4015-a2f4-6597f1ca3ae7.zip",tem
p)
  unzip(temp, exdir=obama_sep_dir, overwrite=T)
  unlink(temp)
}

# Compile September for Obama from raw data
# We're back to the other normal structured data
# Same as the September and December data sets for Trump, so I'll skip the notes

sep_09 <- read.table("data/employment/2009-9/FACTDATA_SEP2009.txt", header= TRUE, sep = ",", quot
e = "\"")
dtagy_sep_09 <- read.table("data/employment/2009-9/DTagy.txt", header= TRUE, sep = ",", quote =
"\"") #agency info table
wkstat_sep_09 <- read.table("data/employment/2009-9/DTwkstat.txt", header= TRUE, sep = ",", quote
= "\"")

sep_09 <- left_join(sep_09, dtagy_sep_09)
sep_09 <- left_join(sep_09, wkstat_sep_09)

sep_09$two <- substr(sep_09$AGYT, 0, 2)
sep_09$AGYT <- gsub(".*-", "", sep_09$AGYT)
sep_09$AGYSUBT <- gsub(".*-", "", sep_09$AGYSUBT)

sep_09_filtered <- sep_09 %>%
                 filter(TOA=="10" |
                  TOA=="15" |
                  TOA=="30" |
                  TOA=="32" |
                  TOA=="35" |
                  TOA=="36" |
                  TOA=="38" |
                  TOA=="50" |
                  TOA=="55") %>%
  select(AGYSUB, LOC, OCC, PATCO, PPGRD, GSEGRD, SALLVL, WORKSCH, TOA,  AGELVL, LOSLVL, EMPLOYMEN
T,
         LOS, AGYSUBT, AGYT, AGYTYPT, two) %>%
  mutate(Date="September",President="Obama" )

sep_09_raw <- sep_09 %>%
  select(AGYSUB, LOC, OCC, PATCO, PPGRD, GSEGRD, SALLVL, WORKSCH, TOA,  AGELVL, LOSLVL, EMPLOYMEN
T,
         LOS, AGYSUBT, AGYT, AGYTYPT, two) %>%
  mutate(Date="September",President="Obama" )
```

```r
# Alright, some agency and department info was left out of the December 2008 data
# So we're using the agency/department info from the December 2009 data instead

# Creating a dataframe of agencies and departments in December 2009
obama_agencies <- select(sep_09, AGYSUB, AGY, AGYT, AGYSUBT, AGYTYPT) %>%
  unique()

# Joining that dataframe to the December 2008 data
dec_08 <- left_join(dec_08, obama_agencies)
dec_08$two <- dec_08$AGY


# Prepping the data to join with the September data
dec_08_filtered <- subset(dec_08, type!="Nope")
dec_08_filtered <- dec_08_filtered %>%
  select(AGYSUB, LOC, OCC, PATCO, PPGRD, GSEGRD, SALLVL, WORKSCH, TOA,  AGELVL, LOSLVL, EMPLOYMEN
T,
         LOS, AGYSUBT, AGYT, AGYTYPT, two) %>%
  mutate(Date="December",President="Obama" )

# Gotta clean up the department names a bit
dec_08_filtered_not_na <- subset(dec_08_filtered, !is.na(AGYT))

dec_08_filtered_na <- subset(dec_08_filtered, is.na(AGYT))

dec_08_filtered_na$AGYT <- NULL
dec_08_filtered_na$AGYTYPT <- NULL
obama_agencies_selected <- select(obama_agencies, two=AGY, AGYT, AGYTYPT) %>% unique

dec_08_filtered_na <- left_join(dec_08_filtered_na, obama_agencies_selected) %>%
  select(AGYSUB, LOC, OCC, PATCO, PPGRD, GSEGRD, SALLVL, WORKSCH, TOA, AGELVL, LOSLVL, EMPLOYMEN
T, LOS, AGYSUBT, AGYT, AGYTYPT, two, Date, President)

dec_08_filtered <- rbind(dec_08_filtered_na, dec_08_filtered_not_na)

# Creating an alternative datframe with the raw data
dec_08_raw <- dec_08 %>%
  select(AGYSUB, LOC, OCC, PATCO, PPGRD, GSEGRD, SALLVL, WORKSCH, TOA,  AGELVL, LOSLVL, EMPLOYMEN
T,
         LOS, AGYSUBT, AGYT, AGYTYPT, two) %>%
  mutate(Date="December",President="Obama" )

# Gotta clean up the department names a bit
dec_08_raw_not_na <- subset(dec_08_filtered, !is.na(AGYT))

dec_08_raw_na <- subset(dec_08_filtered, is.na(AGYT))

dec_08_raw_na$AGYT <- NULL
dec_08_raw_na$AGYTYPT <- NULL
obama_agencies_selected <- select(obama_agencies, two=AGY, AGYT, AGYTYPT) %>% unique

dec_08_raw_na <- left_join(dec_08_raw_na, obama_agencies_selected) %>%
  select(AGYSUB, LOC, OCC, PATCO, PPGRD, GSEGRD, SALLVL, WORKSCH, TOA, AGELVL, LOSLVL, EMPLOYMEN
T, LOS, AGYSUBT, AGYT, AGYTYPT, two, Date, President)

dec_08_raw <- rbind(dec_08_raw_na, dec_08_raw_not_na)
```

```r
# Alright, data's been brought in individually

# Let's clean up the agency names

# Get the unique columns for agency code and agency name for each dataframe
dec_08_agysubt <- select(dec_08, AGYSUB, AGYSUBT) %>% unique()
sep_09_agysubt <- select(sep_09, AGYSUB, AGYSUBT) %>% unique()
dec_16_agysubt <- select(dec_16, AGYSUB, AGYSUBT) %>% unique()
sep_17_agysubt <- select(sep_17, AGYSUB, AGYSUBT) %>% unique()

# Combine them all but only take the first instance of the agency code
# This way there's a universal list of codes and agency names
# (Because agency names change year to year, like with abbreviations, depending on the whims of O
PM)

agysubt <- rbind(dec_16_agysubt, sep_17_agysubt, dec_08_agysubt, sep_09_agysubt) %>%
  unique() %>%
  group_by(AGYSUB) %>%
  filter(row_number()==1)

# Prepping the old dataframes by removing the Agency Name column
# And then bringing in the new universal Agency Names dataframe
dec_08_filtered$AGYSUBT <- NULL
dec_08_filtered <- left_join(dec_08_filtered, agysubt)
sep_09_filtered$AGYSUBT <- NULL
sep_09_filtered <- left_join(sep_09_filtered, agysubt)
dec_16_filtered$AGYSUBT <- NULL
dec_16_filtered <- left_join(dec_16_filtered, agysubt)
sep_17_filtered$AGYSUBT <- NULL
sep_17_filtered <- left_join(sep_17_filtered, agysubt)

# Now, let's join the adjusted presidential bodycounts dataframes at their commonality

# Appending the Trump and Obama permanent employment dataframes
total_so_far <- rbind(dec_08_filtered, sep_09_filtered, dec_16_filtered, sep_17_filtered)

# Appending the Trump and Obama raw employment dataframes
raw_so_far <- rbind(dec_08_raw, sep_09_raw, dec_16_raw, sep_17_raw)

# Aggregating the data.
# Counting up the number of employees by month and president
# Permanent employees
total_summary <- total_so_far %>%
  group_by(Date, President) %>%
  count() %>%
  spread(Date, n)

# Manual adjusments for Unspecified workers in Permanent and Non-Permanent category
total_summary[2,3] <- total_summary[2,3] + 18
total_summary[2,2] <- total_summary[2,2] + 19
total_summary[1,3] <- total_summary[1,3] + 26
#total_summary[1,2] <- total_summary[2,2] + ??

total_summary <- total_summary %>%
  mutate(Difference=September-December, `Percent change`=round((September-December)/December*100,
2))
```

```
# Raw employees
raw_summary <-raw_so_far %>%
  group_by(Date, President) %>%
  count() %>%
  spread(Date, n) %>%
  mutate(Difference=September-December, `Percent change`=round((September-December)/December*100,
2))
```

Change in permanent full time employees

In the first nine months in office, government under Obama grew by 68,000 people— or 4 percent.

Trump saw a drop of 16,000 permanent employees during that same time frame. Even though Trump started out with more government employees, the workforce shrank by .8 percent. That's the first time that's happened since Clinton.

```
kable(total_summary)
```

President	December	September	Difference	Percent change
Obama	1775059	1842989	67930	3.83
Trump	1962965	1947048	-15917	-0.81

```
o_agency_summary_raw <- raw_so_far %>%
  group_by(two, AGYT, AGYSUBT, Date, President) %>%
  count() %>%
  spread(Date, n) %>%
  mutate(Difference=September-December, `Percent change`=round((September-December)/December*100,
2)) %>%
  select(two, Agency=AGYT, Department=AGYSUBT, President, Difference, `Percent change`) %>%
  filter(President=="Obama") %>%
  ungroup() %>%
  select(two, Agency, Department, `Obama diff`=Difference, `Obama percent change`=`Percent change
`)


t_agency_summary_raw <- raw_so_far %>%
  group_by(two, AGYT, AGYSUBT, Date, President) %>%
  count() %>%
  spread(Date, n) %>%
  mutate(Difference=September-December, `Percent change`=round((September-December)/December*100,
2)) %>%
  select(two, Agency=AGYT, Department=AGYSUBT, President, Difference, `Percent change`) %>%
  filter(President=="Trump")  %>%
  ungroup() %>%
  select(two, Agency, Department, `Trump diff`=Difference, `Trump percent change`=`Percent change
`)

agency_summary_raw <- full_join(o_agency_summary_raw, t_agency_summary_raw) %>%
  filter(!is.na(`Obama diff`) & !is.na(`Trump diff`)) %>%
  arrange(`Trump diff`, `Trump percent change`)

#datatable(agency_summary_raw, filter='top')
```

Permanent employees by agency

```
o_agency_summary_total <- total_so_far %>%
  group_by(two, AGYT, AGYSUBT, Date, President) %>%
  count() %>%
  spread(Date, n) %>%
  mutate(Difference=September-December, `Percent change`=round((September-December)/December*100,
2)) %>%
  select(two, Agency=AGYT, Department=AGYSUBT, President, Difference, `Percent change`) %>%
  filter(President=="Obama") %>%
  ungroup() %>%
  select(two, Agency, Department, `Obama diff`=Difference, `Obama percent change`=`Percent change
`)

t_agency_summary_total <- total_so_far %>%
  group_by(two, AGYT, AGYSUBT, Date, President) %>%
  count() %>%
  spread(Date, n) %>%
  mutate(Difference=September-December, `Percent change`=round((September-December)/December*100,
2)) %>%
  select(two, Agency=AGYT, Department=AGYSUBT, President, Difference, `Percent change`) %>%
  filter(President=="Trump") %>%
  ungroup() %>%
  select(two, Agency, Department, `Trump diff`=Difference, `Trump percent change`=`Percent change
`)


agency_summary_total <- full_join(o_agency_summary_total, t_agency_summary_total) %>%
#  filter(!is.na(`Obama diff`) & !is.na(`Trump diff`)) %>%
  arrange(`Trump diff`, `Trump percent change`)

datatable(agency_summary_total, filter='top')
```

Show 10 entries   Search: [   ]

	two	Agency	Department	Obama diff	Obama percent change	Trump diff	Trump percent change
		All	All				
1	TR	DEPARTMENT OF THE TREASURY	INTERNAL REVENUE SERVICE	3632	4.1	-6801	-8.6
2	DJ	DEPARTMENT OF JUSTICE	BUREAU OF PRISONS/FEDERAL PRISON SYSTEM	531	1.47	-2320	-5.87
3	AR	DEPARTMENT OF THE ARMY	U.S. ARMY MEDICAL COMMAND	3448	10.66	-1124	-2.73
4	AR	DEPARTMENT OF THE ARMY	ARMY NATIONAL GUARD UNITS (TITLE 32)	-1447	-6.22	-1101	-4.57

	two	Agency	Department	Obama diff	Obama percent change	Trump diff	Trump percent change
5	CM	DEPARTMENT OF COMMERCE	U.S. CENSUS BUREAU	234	1.94	-1040	-7.78
6	SZ	SOCIAL SECURITY ADMINISTRATION	SOCIAL SECURITY ADMINISTRATION	3049	4.84	-1012	-1.61
7	AR	DEPARTMENT OF THE ARMY	U.S. ARMY INSTALLATION MANAGEMENT COMMAND	1747	5.28	-923	-3.99
8	DD	DEPARTMENT OF DEFENSE	DEFENSE CONTRACT MANAGEMENT AGENCY	449	4.79	-605	-5.14
9	TD	DEPARTMENT OF TRANSPORTATION	FEDERAL AVIATION ADMINISTRATION	1145	2.5	-571	-1.26
10	EP	ENVIRONMENTAL PROTECTION AGENCY	ENVIRONMENTAL PROTECTION AGENCY	153	0.91	-508	-3.45

Showing 1 to 10 of 592 entries   Previous   1   2   3   4   5   …   60   Next

```
raw_so_far2 <- raw_so_far
raw_so_far2$AGYT <- ifelse(raw_so_far2$AGYT=="DEPARTMENT OF THE ARMY", "DEPARTMENT OF DEFENSE", r
aw_so_far2$AGYT)
raw_so_far2$AGYT <- ifelse(raw_so_far2$AGYT=="DEPARTMENT OF THE AIR FORCE", "DEPARTMENT OF DEFENS
E", raw_so_far2$AGYT)
raw_so_far2$AGYT <- ifelse(raw_so_far2$AGYT=="DEPARTMENT OF THE NAVY", "DEPARTMENT OF DEFENSE", r
aw_so_far2$AGYT)


o_agency_summary_raw <- raw_so_far2 %>%
  #mutate(AGYT=gsub("-.*", "", AGYT)) %>%
  group_by(AGYT, Date, President) %>%
  count() %>%
  spread(Date, n) %>%
  mutate(Difference=September-December, `Percent change`=round((September-December)/December*100,
2)) %>%
  filter(President=="Obama") %>%
  ungroup() %>%
  select(Agency=AGYT, `Obama diff`=Difference, `Obama percent change`=`Percent change`)

t_agency_summary_raw <- raw_so_far2 %>%
  #mutate(AGYT=gsub("-.*", "", AGYT)) %>%
  group_by(AGYT, Date, President) %>%
  count() %>%
  spread(Date, n) %>%
  mutate(Difference=September-December, `Percent change`=round((September-December)/December*100,
2)) %>%
  filter(President=="Trump") %>%
  ungroup() %>%
  select(Agency=AGYT, `Trump diff`=Difference, `Trump percent change`=`Percent change`)

agency_summary_raw <- full_join(o_agency_summary_raw, t_agency_summary_raw) %>%
  filter(!is.na(`Obama diff`) & !is.na(`Trump diff`)) %>%
  arrange(`Trump diff`, `Trump percent change`)

#datatable(agency_summary_raw, filter='top')
```

Permanent employees by department (Cabinet level only)

This table filters out the Cabinet-level agencies (so 15 out of 80+) and allows for comparison between the changes in employment between Obama and Trump.

```r
total_so_far2 <- total_so_far
total_so_far2$AGYT <- ifelse(total_so_far2$AGYT=="DEPARTMENT OF THE ARMY", "DEPARTMENT OF DEFENSE", total_so_far2$AGYT)
total_so_far2$AGYT <- ifelse(total_so_far2$AGYT=="DEPARTMENT OF THE AIR FORCE", "DEPARTMENT OF DEFENSE", total_so_far2$AGYT)
total_so_far2$AGYT <- ifelse(total_so_far2$AGYT=="DEPARTMENT OF THE NAVY", "DEPARTMENT OF DEFENSE", total_so_far2$AGYT)

o_agency_summary_total <- total_so_far2 %>%
  #mutate(AGYT=gsub("-.*", "", AGYT)) %>%
  filter(AGYTYPT=="Cabinet Level Agencies") %>%
  group_by(AGYT, Date, President) %>%
  count() %>%
  spread(Date, n) %>%
  mutate(Difference=September-December, `Percent change`=round((September-December)/December*100,
2)) %>%
  filter(President=="Obama") %>%
  ungroup() %>%
  select(Agency=AGYT, `Obama diff`=Difference, `Obama percent change`=`Percent change`)

t_agency_summary_total <- total_so_far2 %>%
  #mutate(AGYT=gsub("-.*", "", AGYT)) %>%
  filter(AGYTYPT=="Cabinet Level Agencies") %>%
  group_by(AGYT, Date, President) %>%
  count() %>%
  spread(Date, n) %>%
  mutate(Difference=September-December, `Percent change`=round((September-December)/December*100,
2)) %>%
  filter(President=="Trump") %>%
  ungroup() %>%
  select(Agency=AGYT, `Trump diff`=Difference, `Trump percent change`=`Percent change`)

agency_summary_total <- full_join(o_agency_summary_total, t_agency_summary_total) %>%
  filter(!is.na(`Obama diff`) & !is.na(`Trump diff`)) %>%
  arrange(`Trump diff`, `Trump percent change`)

datatable(agency_summary_total, filter='top')
```

Show 10 entries   Search: [   ]

	Agency	Obama diff	Obama percent change	Trump diff	Trump percent change
	All	All	All	All	All
1	DEPARTMENT OF DEFENSE	29329	4.59	-7811	-1.11
2	DEPARTMENT OF THE TREASURY	3780	3.66	-6989	-7.45
3	DEPARTMENT OF JUSTICE	3113	2.93	-1737	-1.52
4	DEPARTMENT OF COMMERCE	544	1.34	-1357	-3.07

	Agency	Obama diff	Obama percent change	Trump diff	Trump percent change
5	DEPARTMENT OF TRANSPORTATION	1271	2.33	-738	-1.35
6	DEPARTMENT OF LABOR	388	2.61	-721	-4.64
7	DEPARTMENT OF STATE	105	1.21	-405	-3.79
8	DEPARTMENT OF ENERGY	124	0.82	-333	-2.26
9	DEPARTMENT OF HEALTH AND HUMAN SERVICES	1913	3.47	-305	-0.46
10	DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT	-367	-3.84	-263	-3.29

Showing 1 to 10 of 15 entries

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Permanent employees by agency size

The table below breaks out the agency by size category to show the scope of change.

```
o_agency_summary_size <- total_so_far %>%
  group_by(AGYTYPT, Date, President) %>%
  count() %>%
  spread(Date, n) %>%
  mutate(Difference=September-December, `Percent change`=round((September-December)/December*100,
2)) %>%
  select(`Agency size`=AGYTYPT, President, Difference, `Percent change`) %>%
  filter(President=="Obama") %>%
  ungroup() %>%
  select(`Agency size`, `Obama diff`=Difference, `Obama percent change`=`Percent change`)

t_agency_summary_size <- total_so_far %>%
  group_by(AGYTYPT, Date, President) %>%
  count() %>%
  spread(Date, n) %>%
  mutate(Difference=September-December, `Percent change`=round((September-December)/December*100,
2)) %>%
  select(`Agency size`=AGYTYPT, President, Difference, `Percent change`) %>%
  filter(President=="Trump") %>%
  ungroup() %>%
  select(`Agency size`, `Trump diff`=Difference, `Trump percent change`=`Percent change`)



agency_summary_size <- full_join(o_agency_summary_size, t_agency_summary_size) %>%
  filter(!is.na(`Obama diff`) & !is.na(`Trump diff`)) %>%
  arrange(`Trump diff`, `Trump percent change`)

datatable(agency_summary_size, filter='top')
```

Show 10 entries   Search:

	Agency size	Obama diff	Obama percent change	Trump diff	Trump percent change
	All	All	All	All	All
1	Cabinet Level Agencies	62777	3.89	-13253	-0.74
2	Large Independent Agencies (1000 or more employees)	4644	3.04	-2494	-1.63
3	Medium Independent Agencies (100-999 employees)	613	7.11	-171	-1.67
4	Small Independent Agencies (less than 100 employees)	-1	-0.11	2	0.22

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