



Trends of Enacted Congressional Bills

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Inspiration



H. R. 748

One Hundred Sixteenth Congress
of the
United States of America

AT THE SECOND SESSION

*Begun and held at the City of Washington on Friday,
the third day of January, two thousand and twenty*

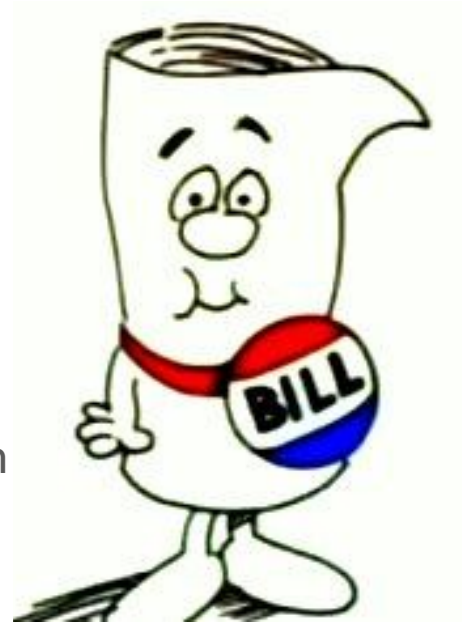
An Act

To amend the Internal Revenue Code of 1986 to repeal the excise tax on high
cost employer-sponsored health coverage.

Be it enacted by the Senate and House of Representatives of

Background

- The shortest path for a bill to become a law includes 20 decision points
- Bills are introduced by a sponsor
- Sponsors are a member of the House of Representatives or Senate
- Bills are assigned to focused committees based on the subject
- A Congress is a two year period, we're currently in 116th



Core Message



Analyze observable trends in enacted bills that can help determine success of future bills.

Questions



- Do more bills get enacted from the House or Senate?
- At what time in the tenure of a Congress are most bills introduced and enacted?
- Which committee has the most bills enacted?
- What subject matter has the most bills enacted?
- Which sponsors factors result in the most success?

Data Source: ProPublica API



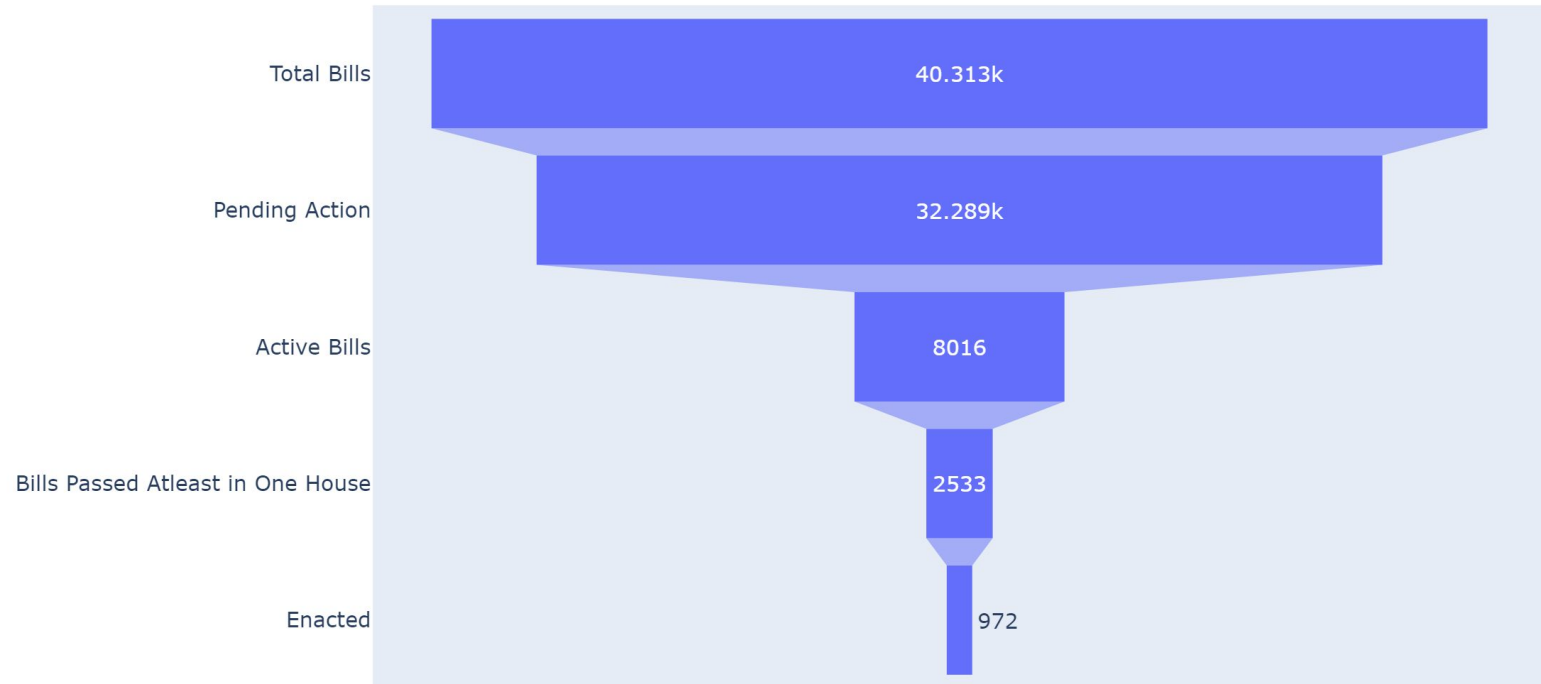
- Data Exploration
 - API calls were performed on each session of congress by chamber (to reduce burden on the server and timeouts)
 - Saved relevant record fields into multiple csv files (from dataframes)
- Data Cleanup
 - Looped through the folder to read all csv files and output it to a dataframe.
 - The master dataframe was used to analyze data quality for the clean up process.
 - Removed congress 112 data due to data inconsistencies
 - Saved the clean data into one single csv file for trend analysis

Data Scope



- Congress 113th - 116th
- Only bills(house and senate), not resolutions
- Data fields Included: bill number, sponsor information (chamber, state, party), subject, committees , dates for bill introduction, enactment

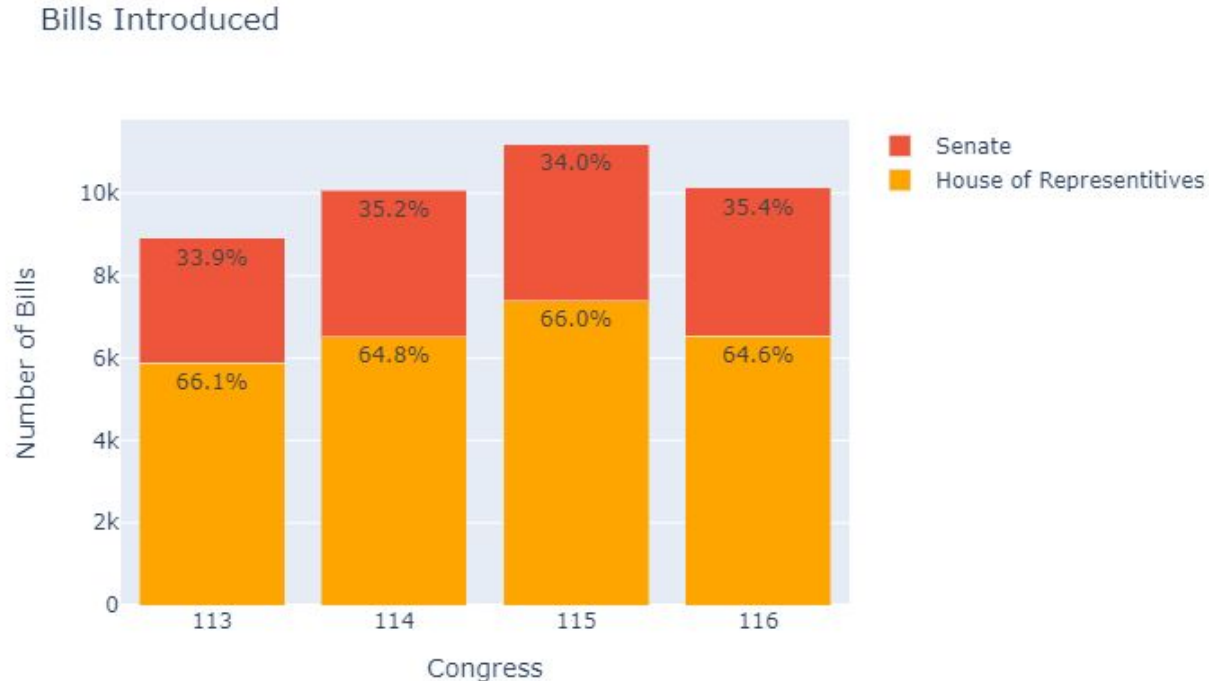
Status of Bills at Different Stages (2013 - 2020)





ANALYSIS OF BILL TRENDS

Q: Do more bills get enacted from the House or Senate?

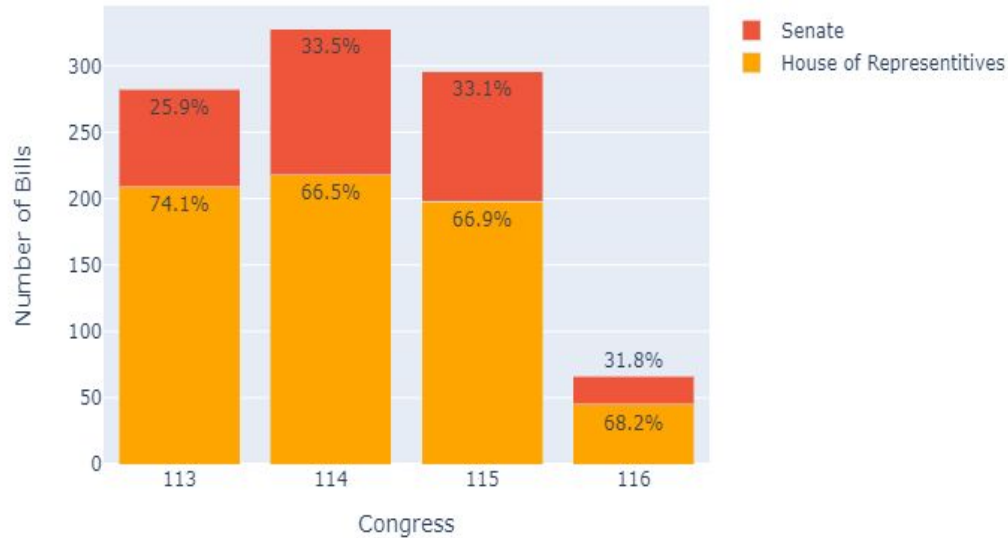


Together, the Senate and the House introduce around 10k bills each congress. The Senate introduces $\frac{1}{3}$

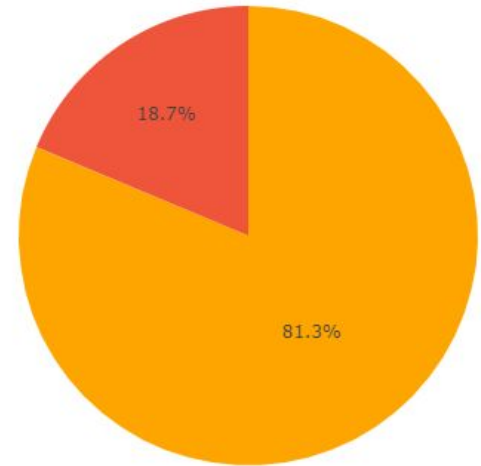
Q: Do more bills get enacted from the House or Senate?



Bills Enacted



Member Distribution Between Chambers

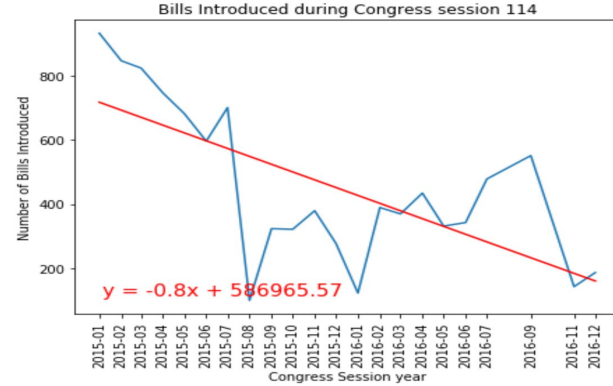
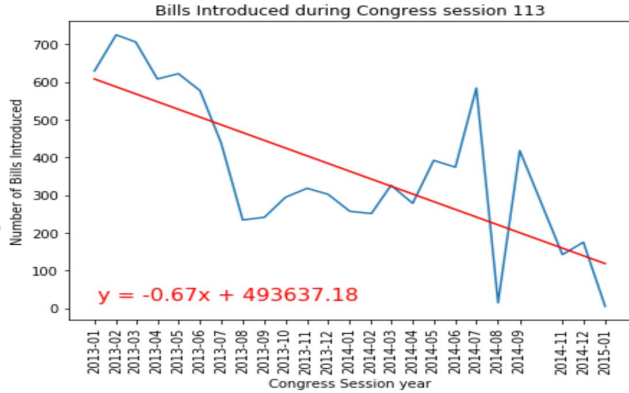


The percent of bills enacted is similar to the percent proposed by each chamber, House bills are enacted more but there are far fewer members of the Senate

Q: When are most bills introduced in Congress?

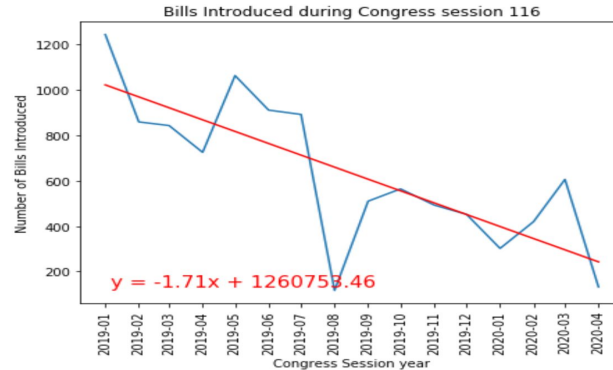
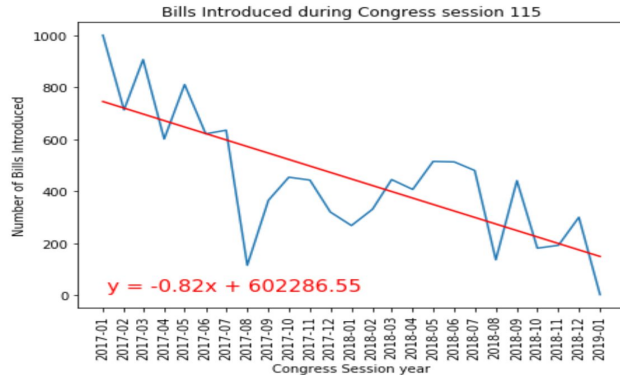


R squared: 0.529
Abs r: 0.727
P value: 5.68163559e-05



R squared: 0.462
Abs r: 0.679
P value: 0.00050518739

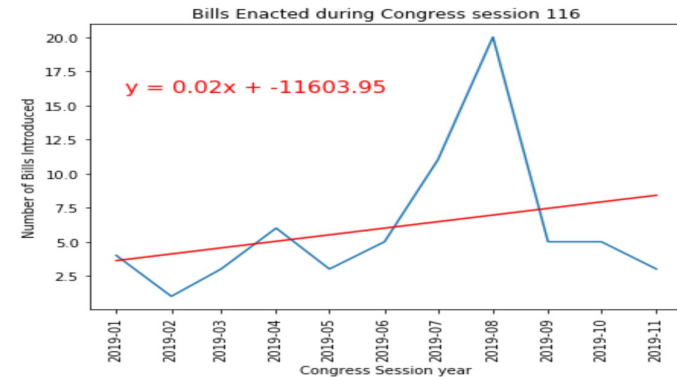
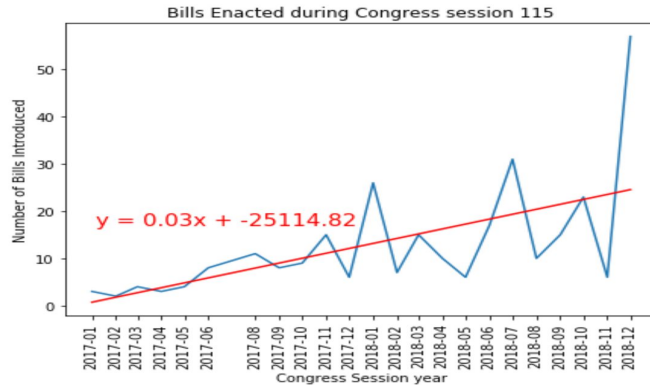
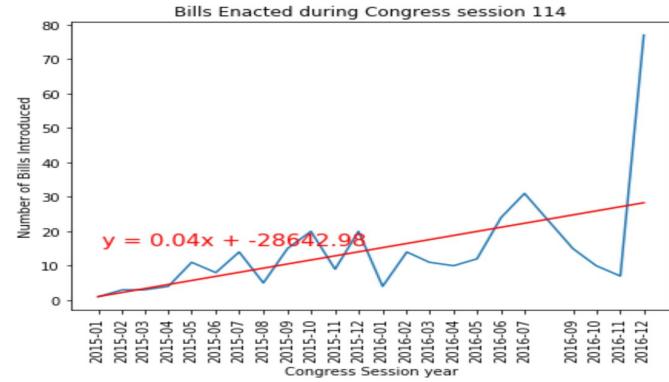
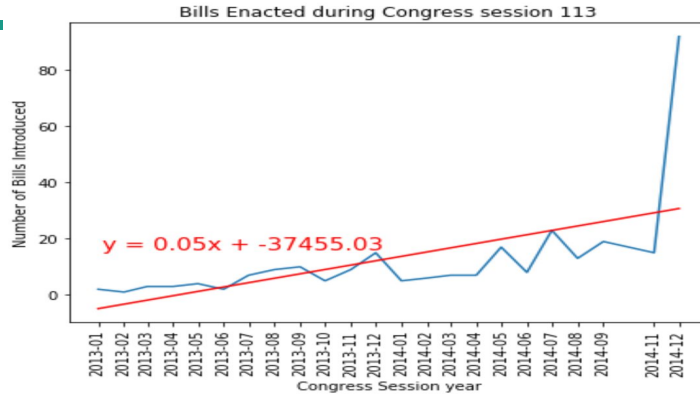
R squared: 0.553
Abs r: 0.743
P value: 2.0698033e-05



R squared: 0.594
Abs r: 0.771
P value: 0.0004746829

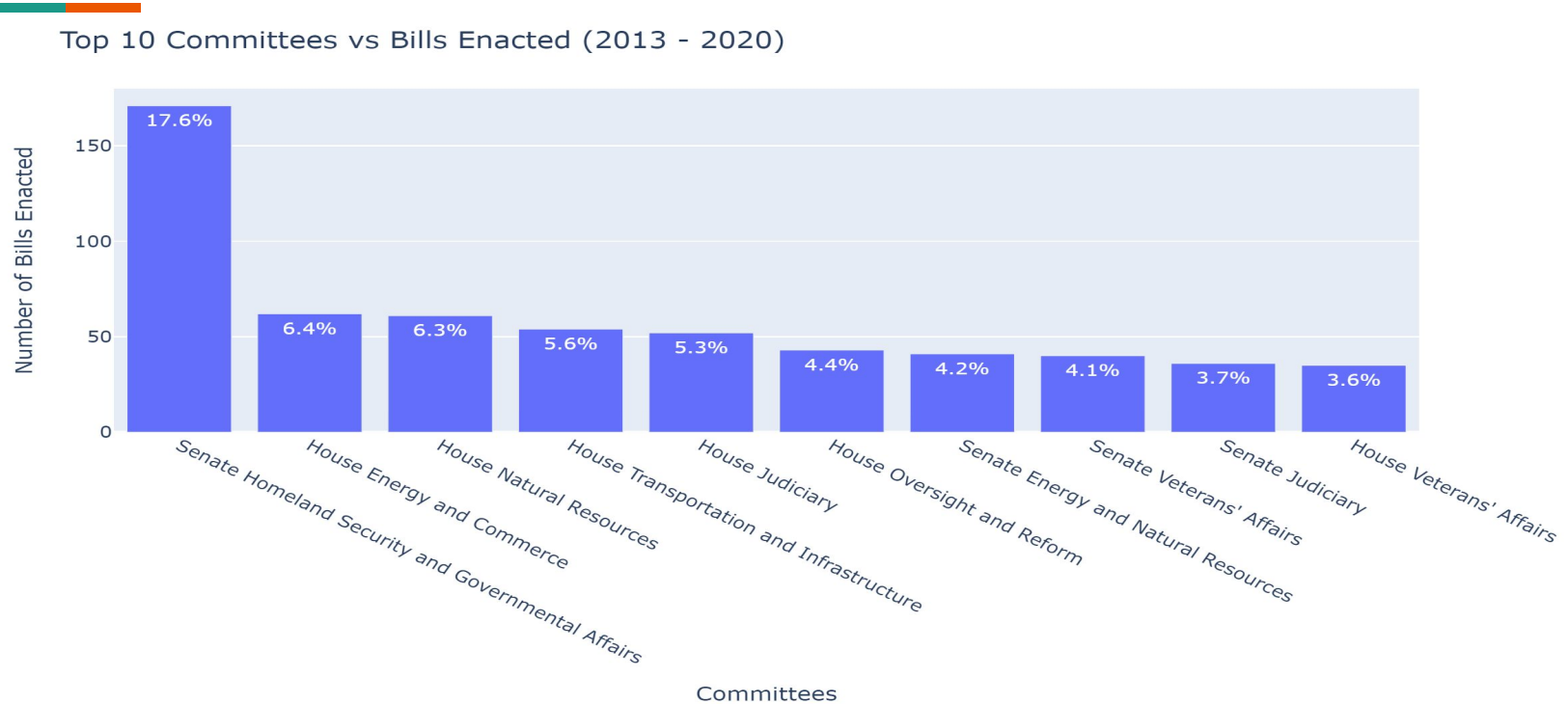
Inference: Bills tend to be introduced early on in the session. High r values shows strong correlation b/w the variables.

Q: When are most bills enacted in Congress?



Inference: The above graphs show that most of the legislation is enacted only in the **final quarter of the session**.

Q: Which committees have the most bills enacted ?



Inference: Homeland Security & Govt Affairs has the highest percentage of bills enacted (17.6%) over time while other committees have an enactment rate of below 6%.

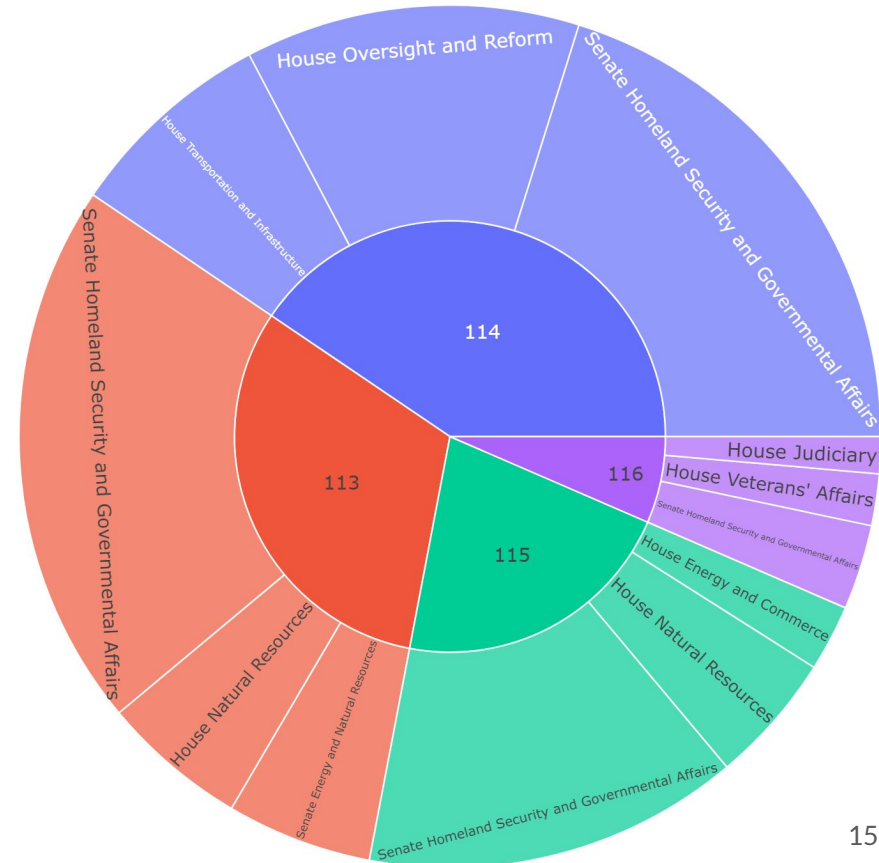
Q: Which committees have the most bills enacted by Congress?



Inference:

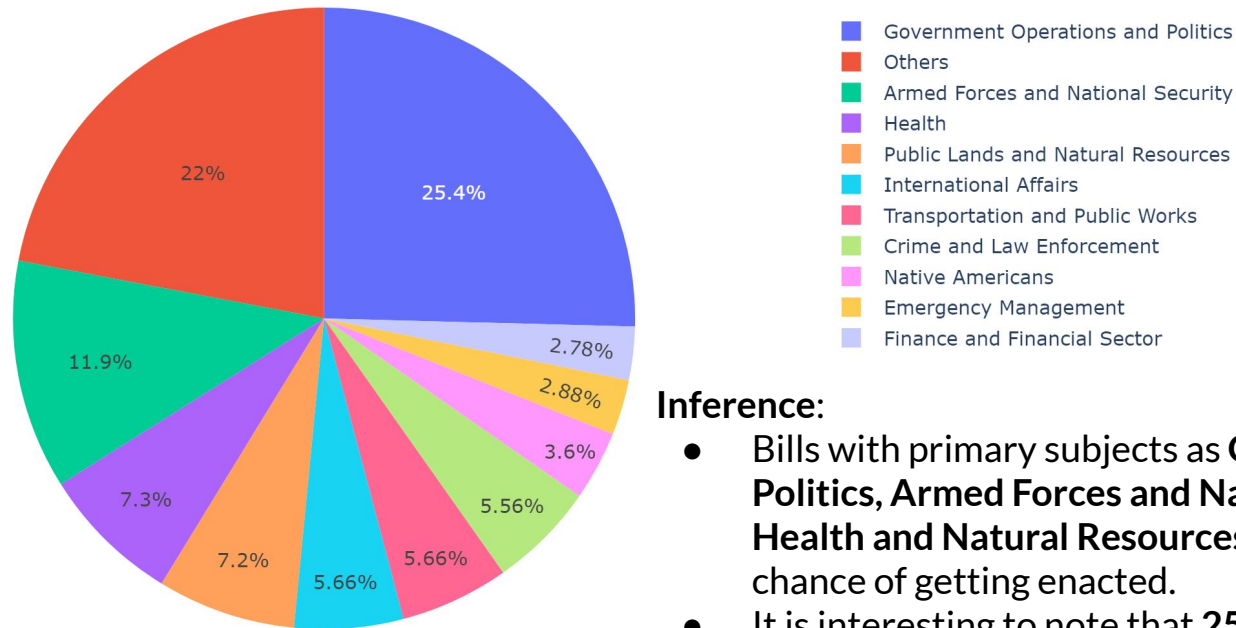
- **Homeland Security & Govt Affairs** has the highest percentage of bills enacted for Congress **113, 114, 115**.
- The current Congress - **116** has 12 enacted bills by **House Judiciary Committee** and 10 by **Homeland Security**.
- However as per observed trend, we might see an increase in enacted bills by **Homeland Security** by Jan 2021.

Top 3 Committees by Congress vs % of Bills Enacted



Q: Which subject matters have the most bills enacted?

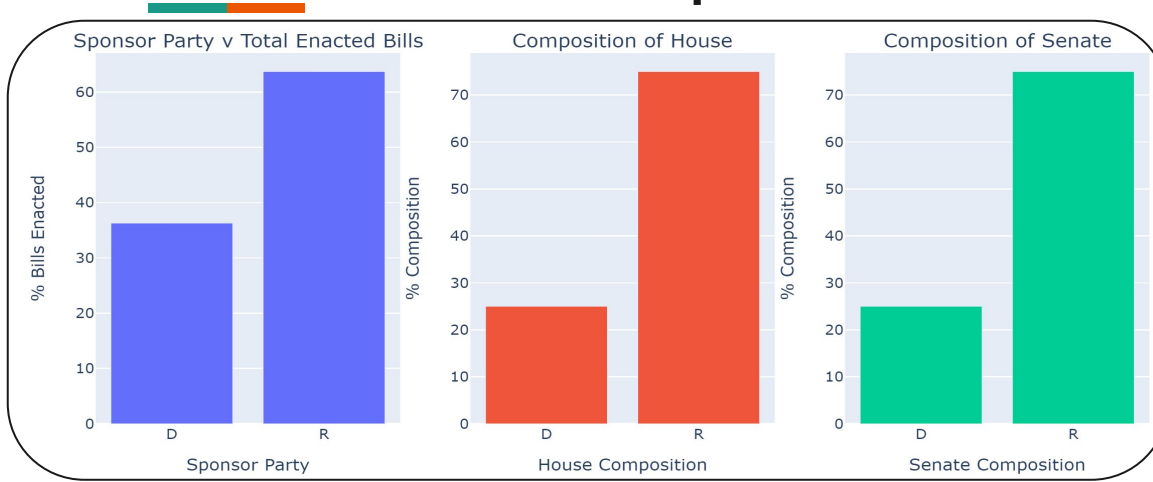
Top 10 primary subjects on a bill



Inference:

- Bills with primary subjects as **Govt Operations & Politics, Armed Forces and National Security, Health and Natural Resources** have a higher chance of getting enacted.
- It is interesting to note that **25%** of the enacted bills are for **Govt Operations and Politics**.

Q: Does Sponsoring Party and Partisan Majority in House/Senate impact bill enactment?



Inference from the Subplots:

1. **Highest % of Bills Enacted are sponsored by the Republican Party.**
2. **Majority in House and Senate is the Republican Party.**
3. There appears to be a **relation** between % Bills Enacted vs House/Senate Majority. Is this relation **significant**?

- **How to Test:** We performed **chi square contingency test** on various combinations of categorical data to evaluate that the variation is not random
- **Categories to Tests:** 1. Party Sponsor & House Majority, 2. Party Sponsor & Senate Majority
- **Observed Results:** Sum of bills enacted per group
- **Null Hypothesis:** { sp=sponsor party; hm=house majority; sm=senate majority}
 - $H_0: \mu_{sp} = \mu_{hm}$
 - $H_0: \mu_{sp} = \mu_{sm}$

Q: Does Sponsoring Party and Partisan Majority in House/Senate impact bill enactment?

Test Results for Sponsor Party & House Majority

Critical value = 3.8414
Chi2 Value = 247.685461
P Value = 8.29925507e-56
G Value = 266.85346

Test Results for Sponsor Party & Senate Majority

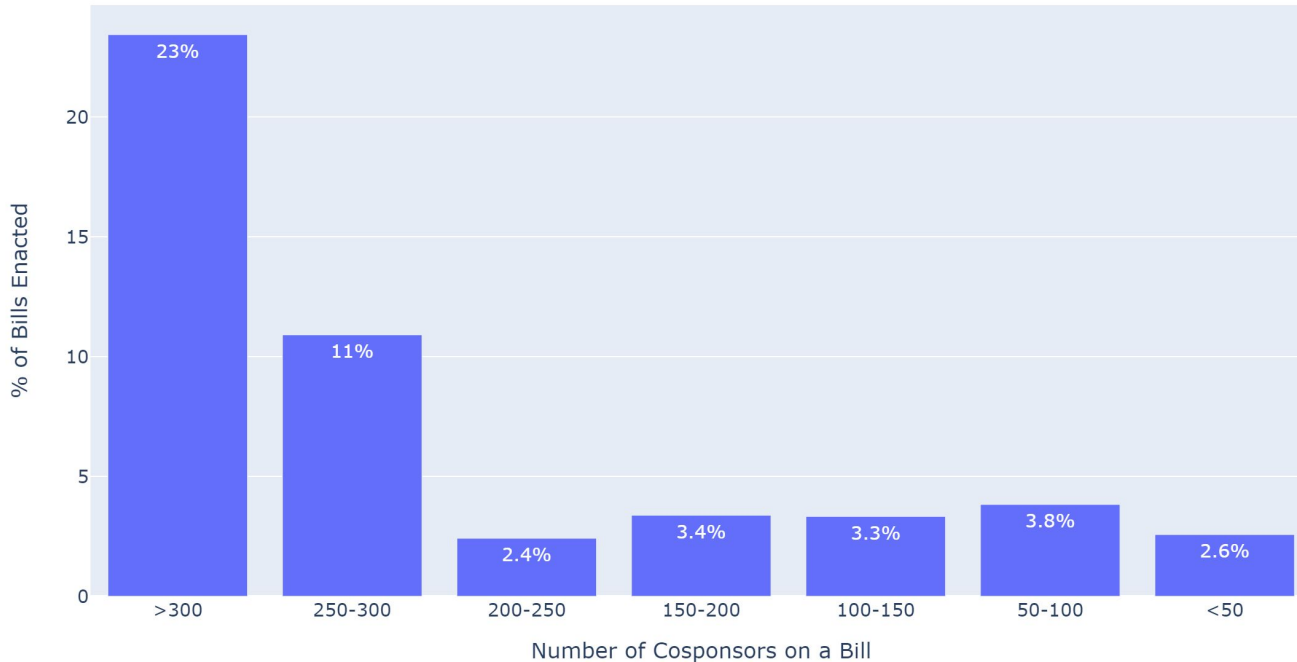
Critical value = 3.8414
Chi2 Value = 11.8302413579
P Value = 0.000582764
G Value = 11.8489991

Inference from chi square contingency test:

- **Chi2 Statistic > Critical Value** for both the tests: Results are **significant**, **rejects null** hypothesis (**H₀**), categorical variables are **dependent** and **variation** is **not** random.
- The very **small p** values imply that the results are statistically significant.
- Hence we can conclude that **Sponsor** party, **House** and **Senate** majority are dependent variables and thus can impact bill enactment.

Q: Does the number of cosponsors impact a bill being enacted?

Cosponsors on a Bill vs Bills Enacted (2013 - 2020)

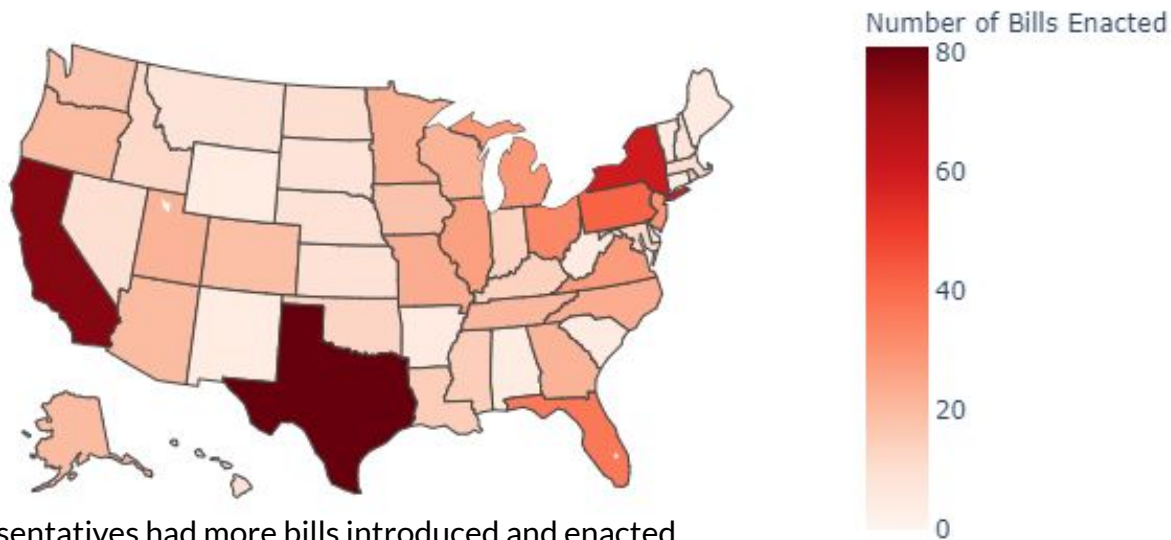


Inference:

- It is interesting to note that bills with **over 300 cosponsors** have a **higher** chance of getting enacted (**$\geq 11\%$**).
- Thus, having significant number of cosponsors entails that the bill has more support from senators and/or representatives and has more likelihood of success.

Q: Which sponsor states have the most success?

Enacted Bills by State



States with more representatives had more bills introduced and enacted

Answers



- Do more bills get enacted from the House or Senate? **House**
- At what time in the tenure of a Congress are most bills introduced and enacted?
 - **Bills** tend to be **introduced early** on in the **session**.
 - Half of all legislation that will be **enacted** is enacted only in the **final quarter of the session**.
- Which committee has the most bills enacted? **Home Security & Govt Affairs**
- What subject matter has the most bills enacted? **Govt Operations & Politics**,
- Which sponsor factors have the most success?
 - **Cosponsors** > 300
 - **Sponsor State**: States with more representatives get more bills enacted
 - **Sponsor Party**: If different **from the House** or **Senate majority** impacts enactment

Future exploration ideas



- Bill type (public, private, resolution, joint resolution)
- Length of bill
- Bill number
- Size of the majority in each house
- Tenure of sponsor
- Public opinion on issue



Questions?



Appendix

Summary



Trends in Congressional Activities

- The House of Representatives introduces more bills and has more bills enacted than the Senate
- **Bills** tend to be **introduced early** on in the **session**.
- Half of all legislation that will be **enacted** is enacted only in the **final quarter of the session**.

Trends in Enacted Bills

- **Committee** with most bills enacted: **Home Security & Govt Affairs**
- **Primary Subjects** on enacted bills: **Govt Operations & Politics, Armed Forces and National Security, Health and Natural Resources**
- **Decision making** of a bill: Significantly impacted by having **different Sponsor** party, **House** and **Senate** majority.
- **Cosponsors** on a bill: Having significant number of cosponsors(>300) entails that the bill has more support from senators and/or representatives and has more likelihood of success.
- **Sponsor States** with more representatives has more bills enacted



CARES Act

- Coronavirus Aid, Relief, and Economic Security Act
- H.R.748
- Introduced by Joe Courtney
 - Democrat from Connecticut
- 7 original co-sponsors (now 369)
- Economics and Public Finance
- House Ways and Means Committee
- Enacted 3/27/20

Q: Which subject matters have the most bills enacted by Congress?

Inference:

- Bills with primary subject as **Govt Operations & Politics** have the highest enactment rate for each chamber of Congress 113, 114, 115, 116, followed by **Armed Forces & National Security**.
- It is interesting to note that Congress 114 had **3rd** highest bills enacted for **Transportation and Public Works**, while others followed suit with **Health** or **Natural Resources**.

