

# Researching Big-Tech Companies and Their Spending Based on Political Affiliations

## TECH MONEY BUSTERS

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### INTRODUCTION

Since the 2016 election, there have been multiple scandals involving large tech companies and their relationship to politics, from the Russian election interference campaigns on Facebook to the Cambridge Analytica data breach. Additionally, polls conducted by the PEW research center suggest that tech companies’ approval ratings from the general public decreased significantly (by 21%) between 2015 and 2019, and the opinion that tech companies have a detrimental effect on the US increased by 16% during the same period. In light of these findings, we were wondering how the relationship between tech companies and campaigns had changed.

Using data gathered from OpenSecrets.org, we analyzed trends before and after 2016 to try and find out whether company donations had changed significantly by amount or party affiliation.

### HYPOTHESIS

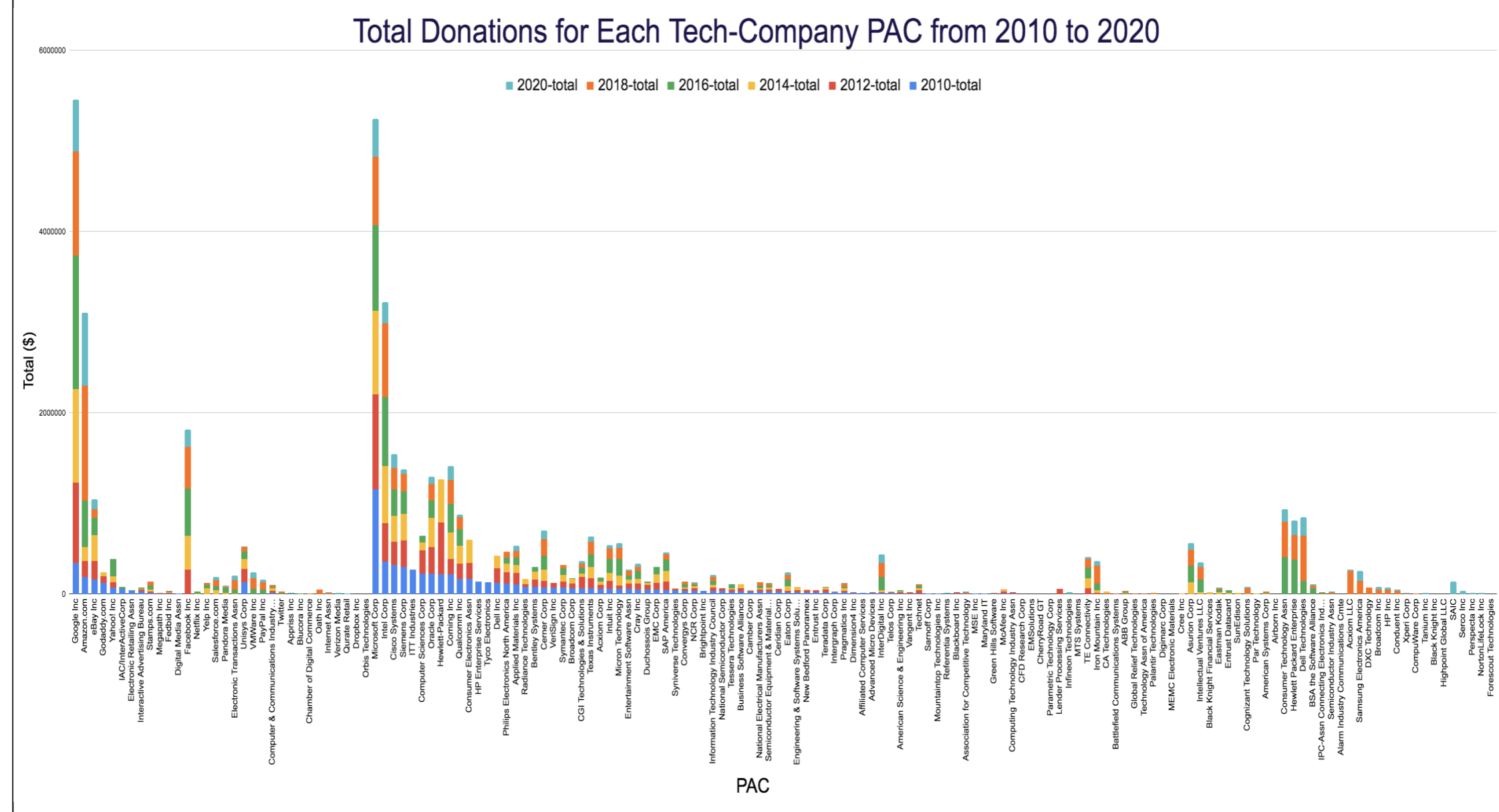
After multiple scandals in 2016, 2017, and 2018 relating to election interference and data breaches, we predicted that tech companies became “more politically active” in order to save their image, in that the average amount donated by tech PACs to various campaigns increased.

We also predicted that companies’ donations would skew conservative on average, especially after Democrats began discussing regulating tech companies.

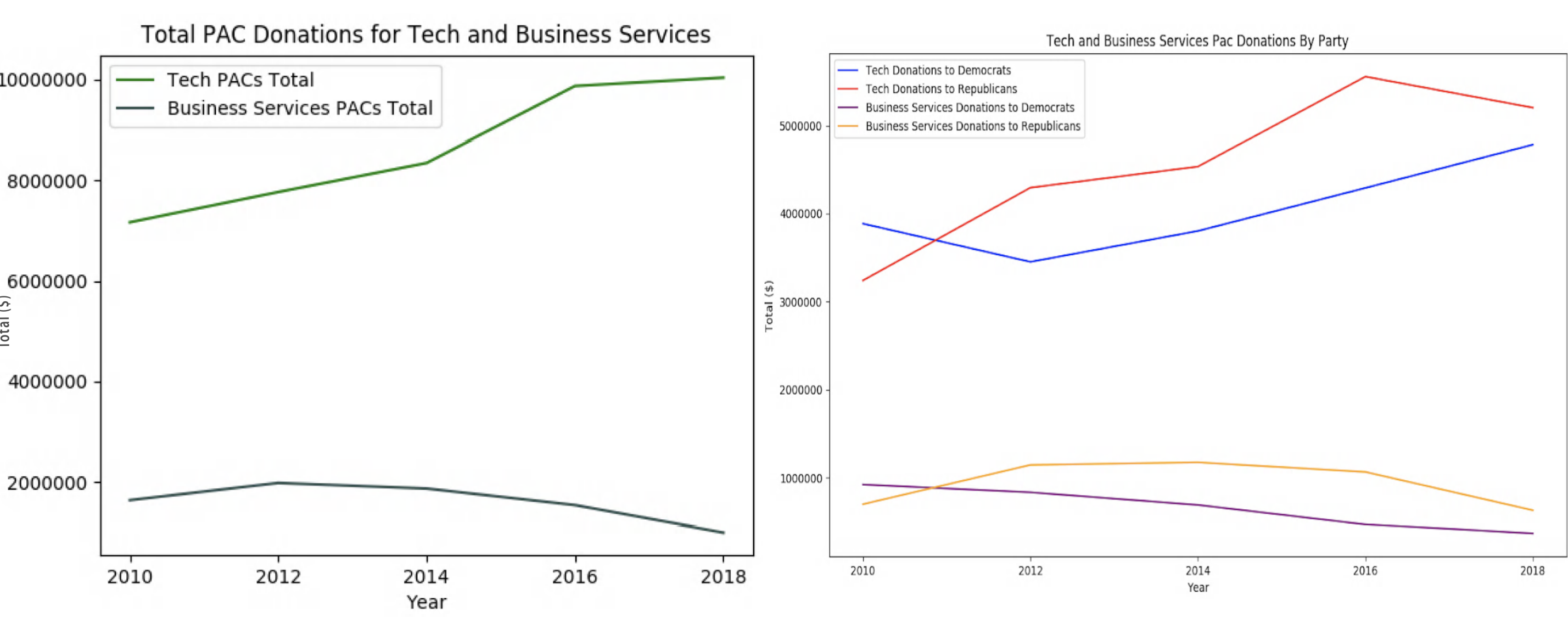
### METHODOLOGY

We scraped our data from opensecrets.org, a site that aggregates campaign finance and lobbying data from various sources (including the Federal Election Commission). Because we’re interested in big tech companies’ money in politics, we had to filter PACs by sector. OpenSecrets provides two categories for what we defined as “Tech Companies”: Electronics Manufacturing and Equipment and Internet.

We also gathered data from Business Services, a third sector of comparable size to both the sectors we included in our “Tech Companies” definition, to see whether the same trends could be seen in that sector as well.

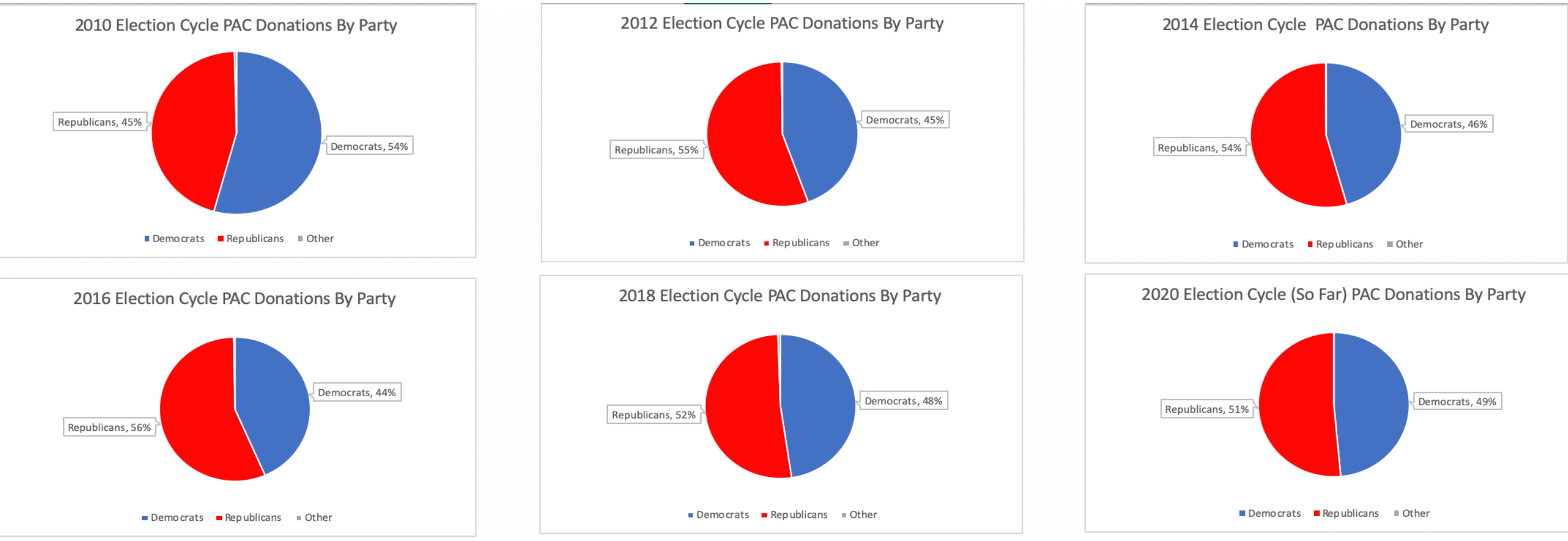


### TECH-COMPANIES PACS VS. BUSINESS SERVICES PACS

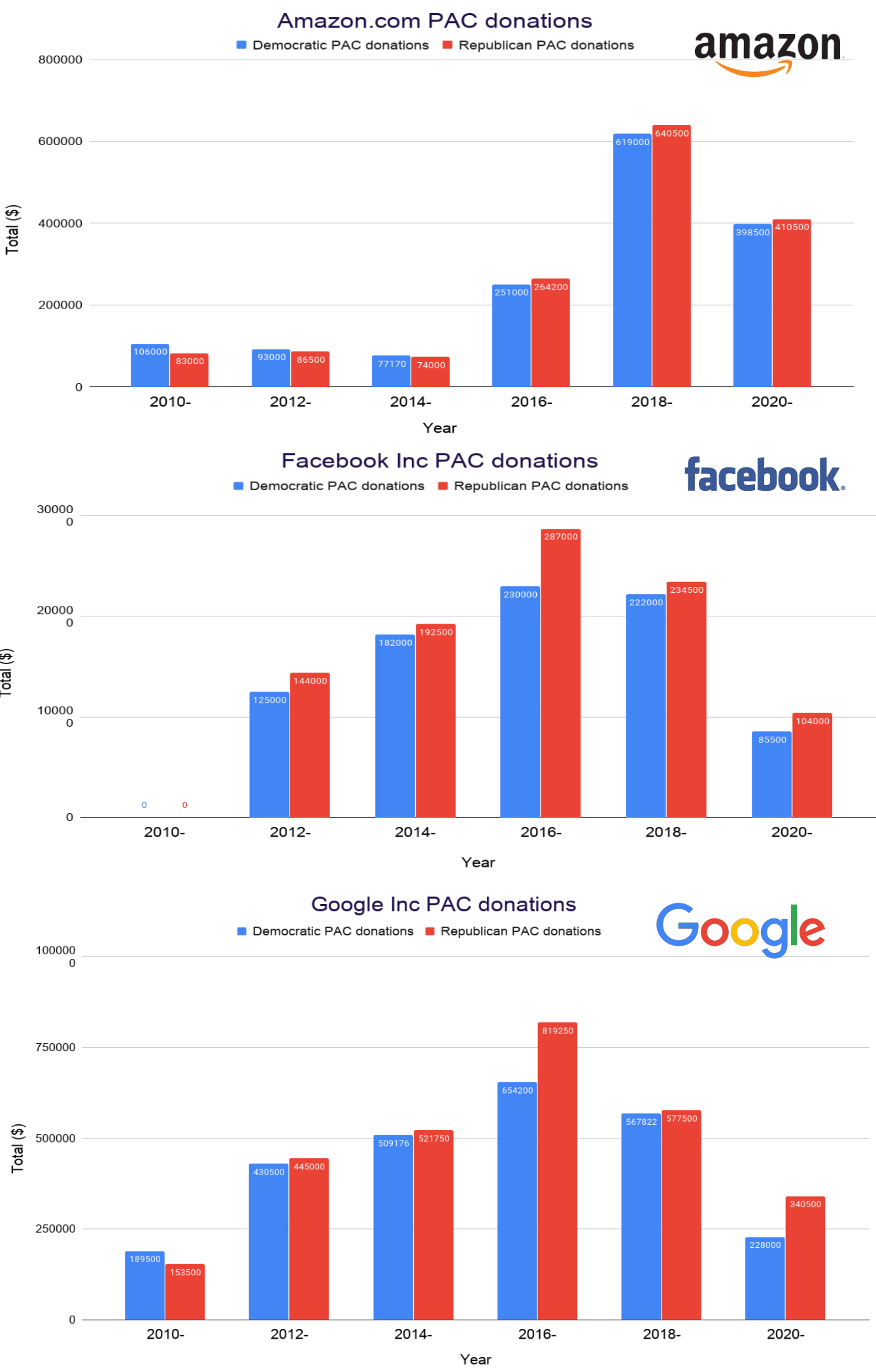
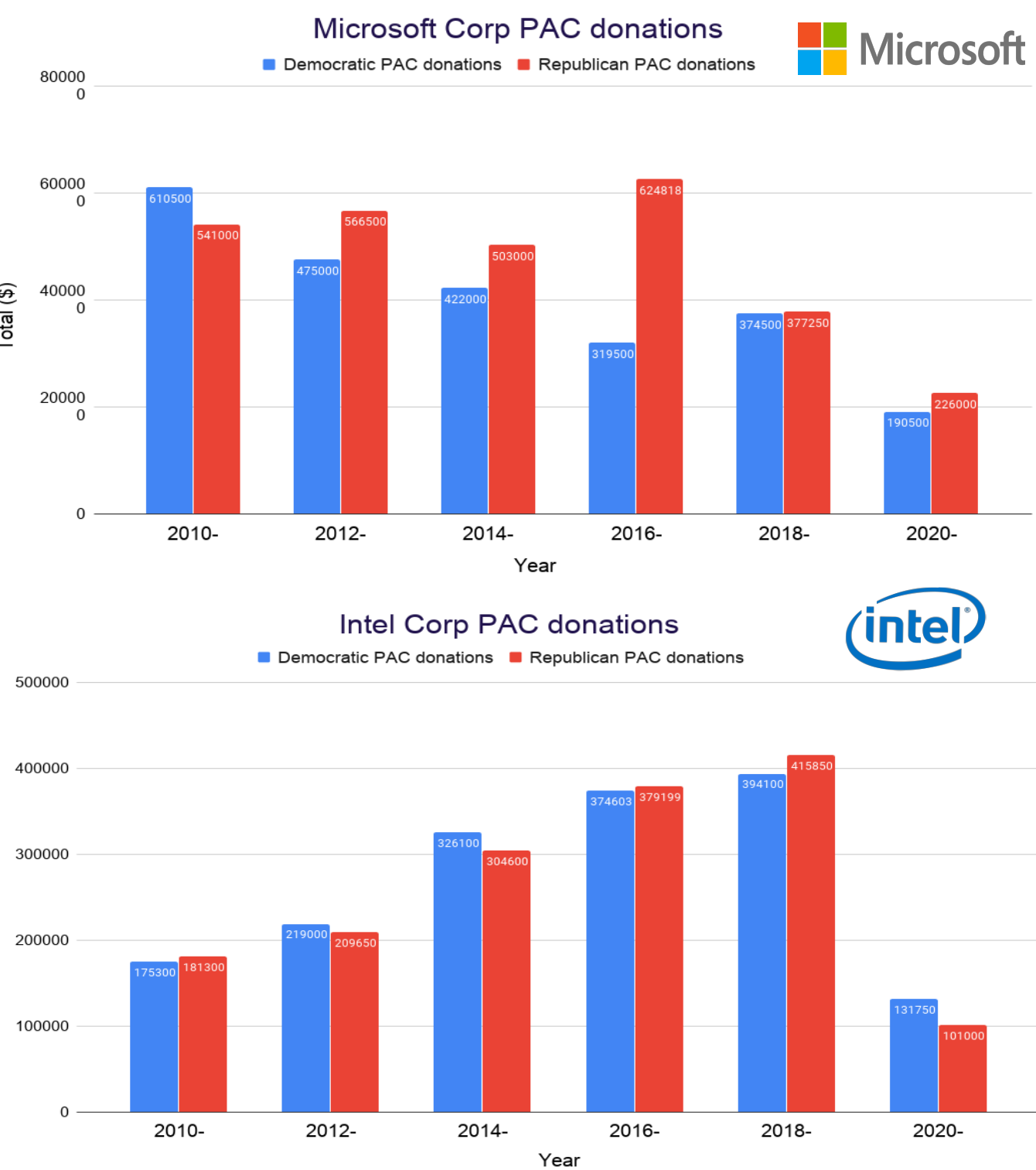


These first graph (left) show the trends in how PAC donations to a specific party over time has changed for Tech Companies and Business Services. The other graph (right) shows how Tech-Companies’ spending differ from Business Services over time.

The pie charts below shows the Republican and Democratic breakdown for each election cycle for Tech PACs.



### Democratic and Republican breakdown for the top 5 spending Tech PACs



### RESUTLS & INTERPRETATION

The table shows Multiple Regression tests on Tech Companies and Business Services.

	Tech Companies			Business Services		
Variables	coefficient	std err	p-value	coefficient	std err	p-value
Constant	2608.9329	59.724	0.000	2090.6752	74.088	0.000
Year	30.3068	14.014	0.031	59.4676	17.647	0.001
Is after 2016	-78.4143	105.632	0.458	-356.1923	141.434	0.012
Senate race	365.8436	55.927	0.000	224.3402	68.073	0.001
Democratic	-106.1264	50.170	0.034	-73.9859	66.095	0.263
West	366.5818	55.112	0.000	140.3138	81.400	0.085
Is_election_year	87.4674	63.202	0.166	39.4279	77.007	0.609

- We have four statistically significant variables with a 95% confidence level: “year”, “senate”, “dem”, and “west.” If a candidate was in a senate race, their donation size would increase by an average of \$366. If a candidate was in the west, their donation size would increase by an average of \$367. If a candidate was a Democrat, the donation would decrease by an average of \$140.
  - In Comparing tech companies’ coefficients for independent variables to business services- they share similar values in range and direction. Thus we believe that the business service industry is a good counterfactual for the tech industry.
- Whether or not a race is after 2016 – the “is\_after\_2016” variable for tech is statistically insignificant. This makes us able to predict the effect of bad press on donations to be inconclusive. For business services, “is\_after\_2016” has a statistically significant effect: the donation amount decreases by \$356.19 if it takes place after 2016.
  - We investigated trends in the top 5 companies by donation (Amazon, Facebook, Google, Intel, and Microsoft) and noticed similarly inconclusive results.
  - Since Business Services saw a significant effect reinforces the inconclusive nature of the results for the tech sector: we do not yet have sufficient data to conclude whether most sector ms might have seen a significant change in donations and therefore that the Tech Sector was an outlier, or vice versa.
- Tech PACs seem more likely to donate to Republican candidates, since there is a large negative coefficient on the “dem” variable. Our visualizations confirm this, as Tech PACs’ donations to Republican candidates were increasing steadily until 2016. 2018 was the first year where Republican donations were trending down, suggesting that this value may change in the future, and that Tech companies’ donations are in fact growing less conservative, not more conservative as we hypothesized.
  - Business Services donations do not seem to have a significant change based on party affiliation.

We want to improve our prediction accuracy by incorporating future donation data from 2020, this may give us a statistically significant p-value to conclude about the effect of pre/post 2016. However, we can see from both the Table above and the visualization of Democratic and Republican party donation trends over time that the size of donation is leveling off, and that donations to Republicans are trending down for the first time in a decade. These data make us believe that more data will lead us to reject our hypotheses, though with the current data we fail to reject them.

### CONCLUSION

- The average amount donated by Tech PACs to campaigns did not change significantly post-2016.
- Tech PACs have donated more predominantly to Republican candidates, but this may change in the future.
- Factors of geographical location and election type had a far larger effect on donation amount than did most other factors.

### LIMITATIONS & SIGNIFICANCE

In evaluating the model, one challenge was that we collected 2020 data in our table, but this data is incomplete and was therefore skewing our results. We decided to leave this data out of our final analysis and use it only for visualization and total donation calculation purposes.

Money in elections is important to election results, and those who win impact everyone through the laws they make, pass, and prioritize. What this project has shown us is that anything that benefits tech companies can have a tangible political impact, since some of that money goes to campaign finance. In effect, spending time on social media or buying a product on Amazon is not only a choice that impacts us – it has the potential to impact our entire nation.