

Appendix

Data Collection

For this initial iteration, I have collected 2,349,526 financial disclosure forms as of September 19, 2019 for nonprofit organizations operating between the years 2007 and 2016, (with the vast majority coming between 2009 and 2016.) From these, I have data on 544,950 unique nonprofits. For each form, I wrote a Python script that iterates over the varying fields in the disclosure form to find whether this nonprofit made a grant to another nonprofit during a given year. Of the original number of disclosure forms, 529,042 or 97.08 percent made no grants during a given year. For the nonprofits making grants, the largest grant made during a given year was \$3,180,372,057,(from the Cystic Fibrosis Foundation Therapeutics Inc to the Cystic Fibrosis Foundation - Headquarters in 2014) while the smallest was \$1.

Given the wealth of the disclosure forms, there are numerous ways to draw linkages between groups. Possibilities that will be explored in future iterations of this project will include shared board members, shared tax prepares and shared vendors—detailed on the yearly tax returns. Initially however, I will use grants made between nonprofits as network edges. These grants detail infusions of cash that one nonprofit made to another during the 12-month period covered by the filing along with the purpose of the grant.

There is a present issue with missing data in the disclosure forms released by the IRS. Cross-checking the digitized disclosure forms released by the IRS as of September 19, 2019 against the full listing of tax-exempt organizations held by the IRS¹, reveals that 1,224,237 organizations have missing disclosure forms. Overall, this accounts for 35.41 percent of all IRS tax-exempt organizations. This is due to rules regarding mandatory electronic filing in which only larger organizations are required by law to file their disclosure forms electronically—meaning they eventually enter the database released by the IRS. While all are able to file electronically, requirements to do so mean that only nonprofits with large amounts of assets and filing many returns per year will definitely enter the IRS' database. Since the deployment of this data in the summer of 2016, the IRS continues to add several thousand digitized forms each month from past years. Finally, starting in January 2020, the IRS will only accept these disclosure forms electronically for fiscal year 2019—meaning

¹Available here: <https://www.irs.gov/charities-non-profits/exempt-organizations-business-master-file-extract-co-bmf>

the universe of all new data on these organizations will be available electronically going forward²

To obviate the missing data issue, I augment the records provided by the IRS with records from the Center for Responsive Politics, (CRP), who had previously completed much of the laborious process of extracting information from paper copies of the IRS disclosure forms for organizations known to be active in politics. Using CRP data adds data for about 20,129 additional nonprofits who were active in American federal elections since 2010. Further, I add data from Conservative Transparency, a project of the Democratic-leaning American Bridge 21st Century Foundation, which bills itself “an interactive database that tracks the flow of money among conservative donors, advocacy groups, political committees, and candidates.”³ Augmenting the data from the IRS and the Center for Responsive Politics, the disclosure data culled from the same Form 990s has been cited by several media outlets including Politico and the International Business Times (see Mahoney 2016; Kotch 2017). The data from Conservative Transparency adds an additional 12,127 unique donor and recipient organizations

Next, I collect information on nonprofits that have spent money in a Congressional election. While the FEC does not provide a category for these politically active nonprofits, this data is available from the Center for Responsive Politics⁴. From this listing, I am able to compile a listing of 182 unique nonprofits spending money since 1990. Subsetting to cycles post *Citizens United*, that number falls to 153 unique nonprofits, (or 84.07 percent of the total.)

Mapping these two data sets together using political nonprofits as bridges, I am able to construct new network diagrams of election spending post *Citizens United*. I will focus primarily on the 2012, 2014 and 2016 races as dark money activity was fairly limited during the 2010 cycle due to the recency of the Supreme Court’s ruling, (The *Citizens United* case was decided in January of that year) and the March 2010 *SpeechNow v. FEC* district court ruling which paved the way for the sizable independent expenditures made by both super PACs and political nonprofits (Hasen 2016). For the 2018 race, however, IRS data was still not fully available as of the writing of this draft. As such, that election cycle will be excluded from this analysis.

²See “IRS: Recent legislation requires tax exempt organizations to e-file forms” [Press Release]. Retrieved from <https://www.irs.gov/newsroom/irs-recent-legislation-requires-tax-exempt-organizations-to-e-file-forms>.

³From <http://conservativetransparency.org/about/>, accessed on Feb. 8, 2018.

⁴Data accessed here: <https://www.opensecrets.org/dark-money/top-election-spenders>

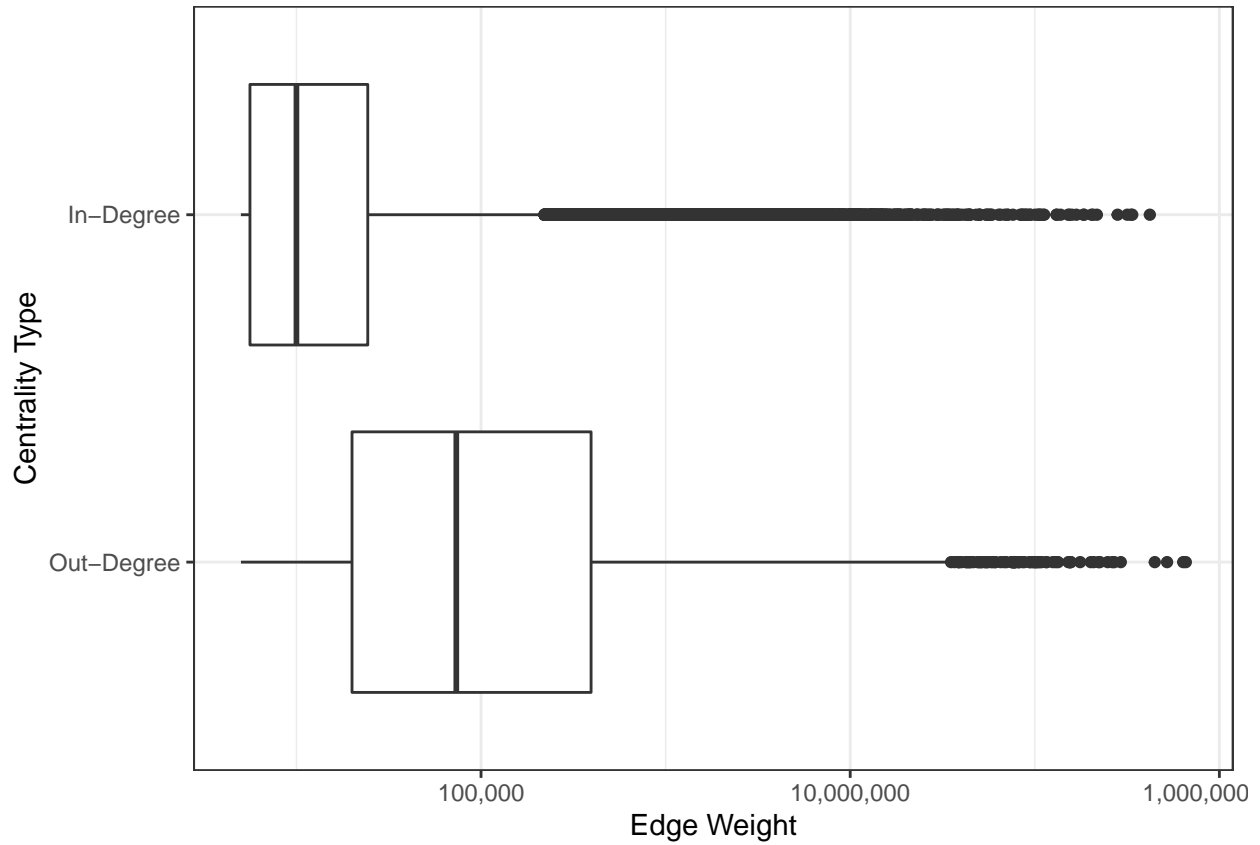


Figure A1: Distribution of Weighted In-Degree and Out-Degree Centrality Scores for Nodes in the Dataset with X-axis on a Logarithmic Scale.

Distribution of Node Degree Centrality and Rankings with Logarithmic Centrality Measures

Figure A1 shows the distribution of the weighted in-degree and out-degree centrality measures for all the nodes included in the data set. Tables A1 and A2 rank the nodes in each campaign cycle's network by the log-transformed degree centrality measure.

Table A1: Log Centrality Measures, FEC + IRS Data. Bold = Dark Money Organization.

Name	PageRank Cent.	Log Weighted In-Degree
2012		
ROMNEY VICTORY INC	0.0344	20.2721
OBAMA VICTORY FUND 2012	0.0267	20.0709
AMERICAN ENCORE	0.0000	19.4114
DNC SERVICES CORPORATION/DEMOCRATIC NATIONAL COMMITTEE	0.0059	19.3306
OBAMA FOR AMERICA	0.0067	19.2319
REPUBLICAN NATIONAL COMMITTEE	0.0077	19.2159
ROMNEY FOR PRESIDENT INC.	0.0039	18.8588
RESTORE OUR FUTURE, INC.	0.0018	18.8394
SIERRA CLUB	0.0000	18.7113
AMERICAN CROSSROADS	0.0008	18.5685
NATIONAL REPUBLICAN CONGRESSIONAL COMMITTEE	0.0249	18.4401
DEMOCRATIC CONGRESSIONAL CAMPAIGN COMMITTEE	0.0226	18.2907
PRIORITIES USA ACTION	0.0009	18.2700
NATIONAL REPUBLICAN SENATORIAL COMMITTEE	0.0088	18.1730
AMERICAN FUTURE FUND	0.0000	18.1723
2014		
SIERRA CLUB	0.0000	18.8592
DEMOCRATIC CONGRESSIONAL CAMPAIGN COMMITTEE	0.0219	18.5628
NRCC	0.0261	18.4718
REPUBLICAN NATIONAL COMMITTEE	0.0085	18.4343
SCHWAB CHARITABLE FUND	0.0000	18.4101
DEMOCRATIC SENATORIAL CAMPAIGN COMMITTEE	0.0070	18.2198
ACTBLUE	0.0326	18.2114
SENATE MAJORITY PAC	0.0008	18.1741
NEXTGEN CLIMATE ACTION COMMITTEE	0.0001	18.1708
DNC SERVICES CORPORATION/DEMOCRATIC NATIONAL COMMITTEE	0.0071	18.1568
NATIONAL REPUBLICAN SENATORIAL COMMITTEE	0.0124	18.1352
EAST BAY COMMUNITY FOUNDATION	0.0000	18.1348
BOEHNER FOR SPEAKER	0.0037	17.8286
NATIONAL RIFLE ASSOCIATION OF AMERICA	0.0000	17.6058
HOUSE MAJORITY PAC	0.0009	17.5752
2016		
HILLARY VICTORY FUND	0.0165	20.3046
DNC SERVICES CORP./DEM. NAT'L COMMITTEE	0.0037	19.9174
ACTBLUE	0.0359	19.4938
REPUBLICAN NATIONAL COMMITTEE	0.0061	19.3905
PRIORITIES USA ACTION	0.0006	19.1563
HILLARY FOR AMERICA	0.0112	19.1192
TRUMP VICTORY	0.0052	18.9866
TRUMP MAKE AMERICA GREAT AGAIN COMMITTEE	0.0012	18.8709
DONALD J. TRUMP FOR PRESIDENT, INC.	0.0021	18.8601
DCCC	0.0187	18.6816
RIGHT TO RISE USA	0.0029	18.6465
SIERRA CLUB	0.0000	18.5062
SENATE LEADERSHIP FUND	0.0006	18.4798
NRCC	0.0216	18.4434
NEXTGEN CLIMATE ACTION COMMITTEE	0.0002	18.4124

Table A2: Log Centrality Measures, FEC + IRS Data. Bold = Dark Money Organization.

Name	PageRank Cent.	Log Weighted Out-Degree
2012		
OBAMA VICTORY FUND 2012	0.0267	337,229,414
ROMNEY VICTORY INC	0.0344	316,951,458
DNC SERVICES CORPORATION/DEMOCRATIC NATIONAL COMMITTEE	0.0059	216,982,578
REPUBLICAN NATIONAL COMMITTEE	0.0077	206,799,320
FREEDOM PARTNERS CHAMBER OF COMMERCE	0.0000	203,068,000
FREEDOM PARTNERS	0.0000	184,913,000
OBAMA FOR AMERICA	0.0067	158,859,009
ROMNEY FOR PRESIDENT INC.	0.0039	137,922,626
THE SIERRA CLUB FOUNDATION	0.0000	131,711,038
AMERICAN ENCORE	0.0000	100,104,370
NATIONAL REPUBLICAN CONGRESSIONAL COMMITTEE	0.0249	94,716,644
DEMOCRATIC CONGRESSIONAL CAMPAIGN COMMITTEE	0.0226	65,184,512
PLANNED PARENTHOOD FEDERATION OF AMERICA INC	0.0000	56,942,378
ACTBLUE	0.0316	42,935,262
DEMOCRATIC SENATORIAL CAMPAIGN COMMITTEE	0.0075	42,093,379
2014		
THE SIERRA CLUB FOUNDATION	0.0000	151,804,747
SILICON VALLEY COMMUNITY FOUNDATION	0.0000	106,733,622
PLANNED PARENTHOOD FEDERATION OF AMERICA INC	0.0000	103,574,435
NRCC	0.0261	91,363,067
DEMOCRATIC CONGRESSIONAL CAMPAIGN COMMITTEE	0.0219	84,769,693
ACTBLUE	0.0326	83,385,432
KAISER FOUNDATION HOSPITALS	0.0000	76,169,302
STEYER, THOMAS F.	0.0000	68,757,400
SCHWAB CHARITABLE FUND	0.0000	54,239,749
REPUBLICAN NATIONAL COMMITTEE	0.0085	48,125,721
NATL CHRISTIAN CHARITABLE FDN INC	0.0000	44,077,528
NRA FOUNDATION INC	0.0000	43,861,876
THE PEW CHARITABLE TRUSTS	0.0000	40,325,629
NATIONAL REPUBLICAN SENATORIAL COMMITTEE	0.0124	34,045,790
SENATE MAJORITY PAC	0.0008	32,950,521
2016		
HILLARY VICTORY FUND	0.0165	420,050,636
DNC SERVICES CORP./DEM. NAT'L COMMITTEE	0.0037	332,025,879
ACTBLUE	0.0359	280,885,346
HILLARY FOR AMERICA	0.0112	183,607,353
REPUBLICAN NATIONAL COMMITTEE	0.0061	167,993,766
TRUMP MAKE AMERICA GREAT AGAIN COMMITTEE	0.0012	153,902,990
DONALD J. TRUMP FOR PRESIDENT, INC.	0.0021	131,135,700
NRCC	0.0216	112,526,230
DCCC	0.0187	110,974,257
SCHWAB CHARITABLE FUND	0.0000	107,325,752
THE SIERRA CLUB FOUNDATION	0.0000	104,715,944
PLANNED PARENTHOOD FEDERATION OF AMERICA INC	0.0000	94,145,707
FOUNDATION FOR THE CAROLINAS	0.0000	89,449,807
TRUMP VICTORY	0.0052	88,974,603
STEYER, THOMAS F.	0.0000	86,503,144

T-Test Results and Interval Plots Showing Network Centrality Measures for Party and Dark Money Organizations.

Figures 12 and 13 depict the results of Figures 9 and 10 from the main section as interval plots. The points show the mean network centrality of each type of organization, segmented by whether those measures were calculated with just FEC data or FEC and IRS data combined. The error bars depict 95% confidence intervals. As when modeled as a linear regression, we see that party organizations remain more central when measured with PageRank centrality, but are indistinguishable from dark money organizations when betweenness centrality is compared and data from both the FEC and IRS is incorporated.

As a further robustness check, I also examined the difference in network centrality means between party organizations and dark money organizations via a two sample t-test. The results mirror the linear regressions from the main section and the interval plots depicted in Figures 12 and 13. Utilizing just FEC data, I find that the means shown in Figures 12 and 13 were statistically different for both PageRank Centrality, $t(1690)=-18.97$, $p < .001$, and Betweenness Centrality, $t(1689)=-5.51$, $p < .001$. When including IRS data as well, the difference measured with PageRank Centrality remained statistically significant, $t(1697)=-18.74$, $p < .001$, but no statistically significant difference was detected when measured with Betweenness Centrality, $t(2486)=-1.56$, $p=0.12$.

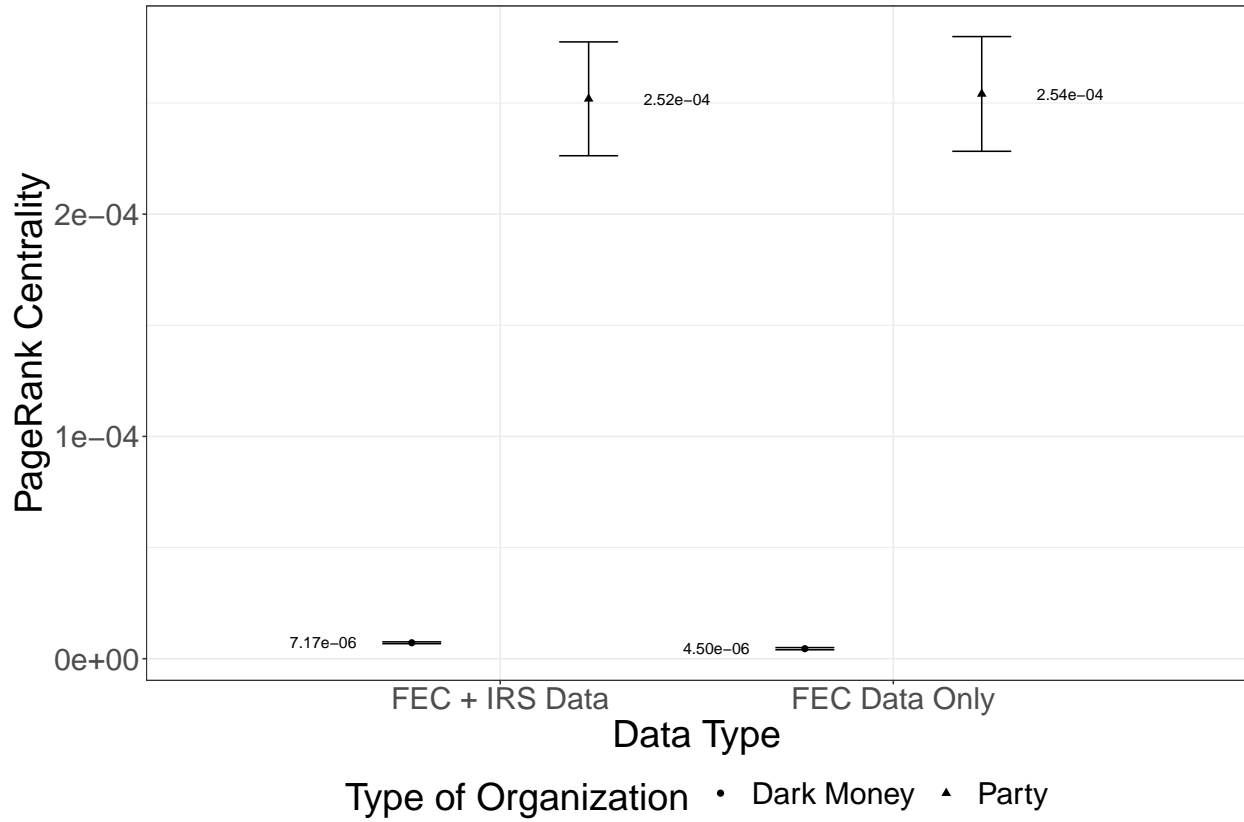


Figure A2: Interval plot of PageRank centrality for party organizations and dark money organizations. Party organizations are more central to the network regardless of whether financial data from the IRS is incorporated.

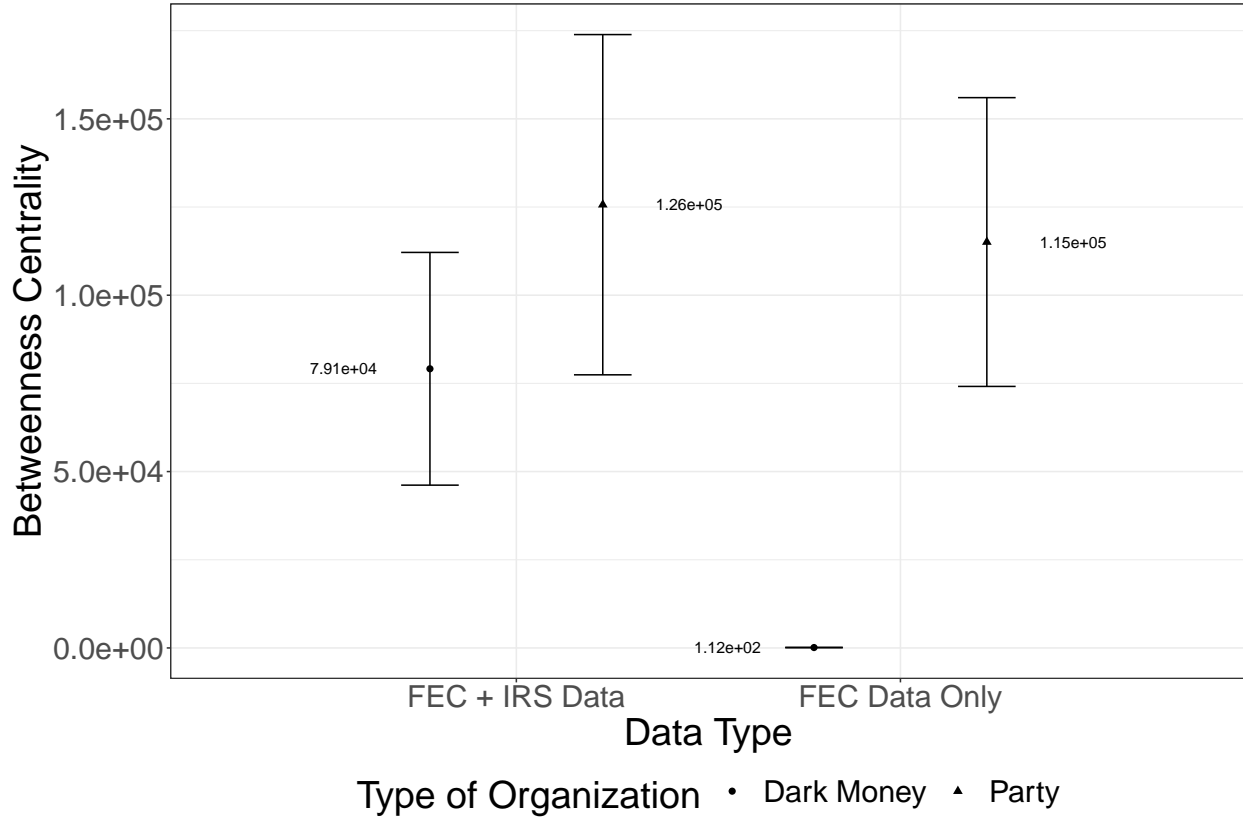


Figure A3: Interval plot of betweenness centrality for party organizations and dark money organizations. In contrast to PageRank centrality, party organizations cease to be more central to the network when financial data from the IRS is incorporated.

References:

Hasen, Richard L. 2016. *Plutocrats United: Campaign Money, the Supreme Court, and the Distortion of American Elections*. new Haven, CT: Yale University Press.

Kotch, Alex. 2017. “Whos Behind the Project Veritas Sting Operation Against the Washington Post?” *International Business Times*. <http://www.ibtimes.com/g00/political-capital/whos-behind-project-veritas-sting-operation-against-washington-post-2620949?i10c.encReferrer=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8%3D&i10c.ua=1>. Accessed: May 2, 2019.

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