Quantifying the Return on Investment (ROI) of Campaign Contributions

Hope Mullins

University of Central Florida

May 27, 2025

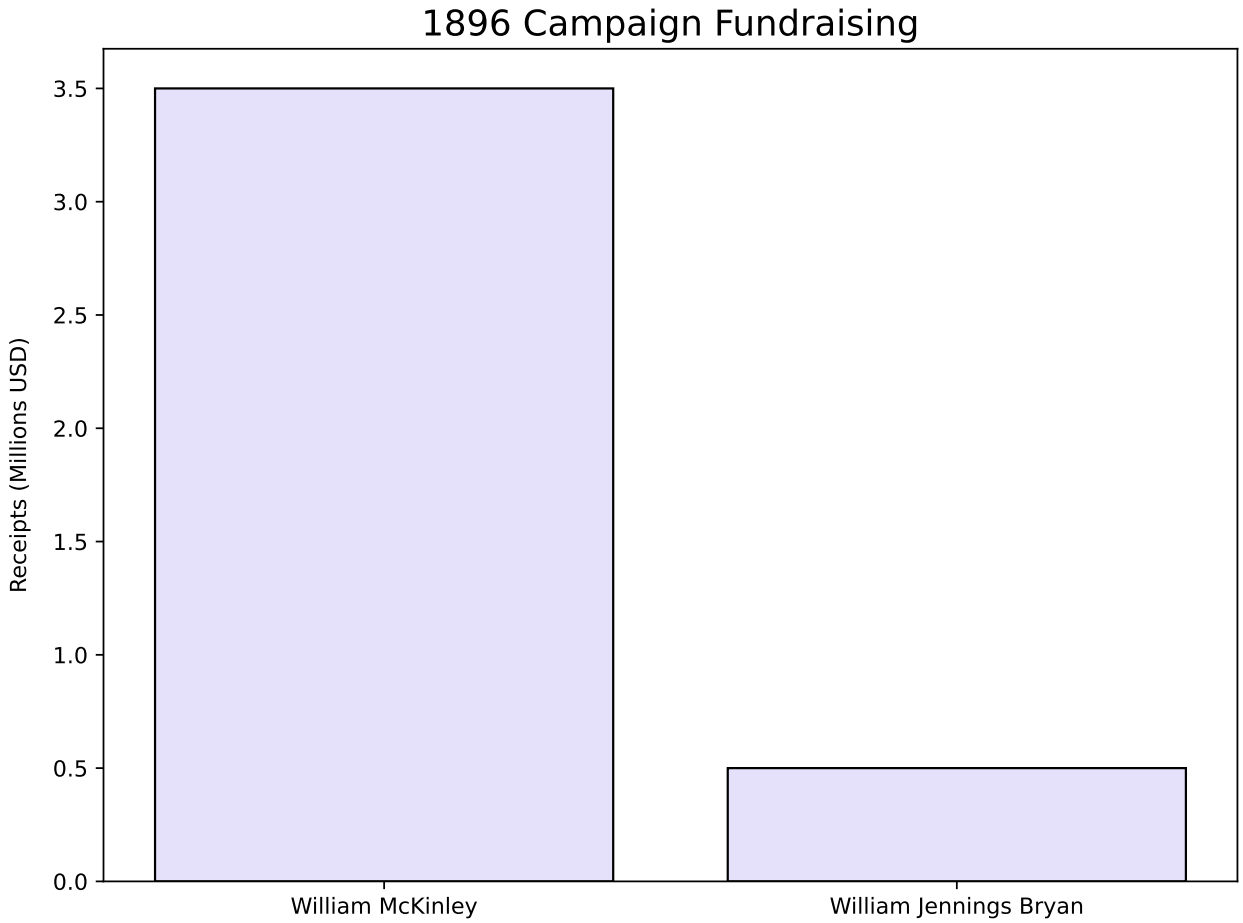
Historical Context

1. 1896 McKinley–Bryan Campaign

Historical Context

1. 1896 McKinley–Bryan Campaign
   - Demonstrates power in financing

McKinley-Bryan Funds Distribution



Historical Context (Continued)

2. *Buckley v. Valeo* (1976)

Historical Context (Continued)

2. *Buckley v. Valeo* (1976)
   - Watergate

Historical Context (Continued)

2. *Buckley v. Valeo* (1976)
   - Watergate
   - Federal Election Campaign Act (FECA)

Buckley v. Valeo

- "...[Contribution limits] constituted one of the election law's 'primary weapons against the reality or appearance of improper influence stemming from the dependence of candidates on large campaign contributions'" (*Buckley v. Valeo*).

Buckley v. Valeo

- "...[Contribution limits] constituted one of the election law's 'primary weapons against the reality or appearance of improper influence stemming from the dependence of candidates on large campaign contributions'" (*Buckley v. Valeo*).
- Though the Court upheld contribution limits, they determined that expenditure limits violated the First Amendment's protection of political speech.

Historical Context (Continued)

3. 2008 Obama Small-Dollar Revolution

Obama Small-Dollar Revolution

GENERAL ELECTION

Candidate	Net Individual Contributions	From Donors Aggregating in the General Election to ... $200 or less		$201-999		$1000 or more	
	Net $ Total	$	%	$	%	$	%
Obama	336,923,179	114,118,232	34%	79,165,509	23%	143,136,120	42%

GENERAL & PRE-NOMINATION COMBINED

Candidate	Net Individual Contributions	From Donors Aggregating in the General Election to ... $200 or less		$201-999		$1000 or more	
	Net $ Total	$	%	$	%	$	%
Obama	746,077,038	181,344,446	24%	207,931,878	28%	356,800,714	48%

NOTE: Because Obama is the only candidate who raised and spent private funds money for his general election campaign committee, these tables present his aggregate contributions per donor separately for the primaries and general election. This permits a direct comparison of Obama's primary fundraising to those of other candidates and Obama's general election to his own primary fundraising. Under this procedur donor who gave $150 in the primaries and $150 in the general election would be characterized as being in the separate "200-and-under" aggregates for the primary and general election.

The Campaign Finance Institute

Historical Context (Continued)

4. *Citizens United v. FEC* (2010)

Historical Context (Continued)

4. *Citizens United v. FEC* (2010)
   - Corporations and unions

Historical Context (Continued)

4. *Citizens United v. FEC* (2010)
   - Corporations and unions
   - Hillary Clinton

Historical Context (Continued)

4. *Citizens United v. FEC* (2010)
   - Corporations and unions
   - Hillary Clinton
   - Bipartisan Campaign Reform Act

Citizens United v. FEC

- "Independent expenditures, including those made by corporations, do not give rise to corruption or the appearance of corruption" (*Citizens United v. Federal Election Commission*).

Citizens United v. FEC

- "Independent expenditures, including those made by corporations, do not give rise to corruption or the appearance of corruption" (*Citizens United v. Federal Election Commission*).
- Led to a rise of Super PACs and dark money spending.

Citizens United v. FEC

- "Independent expenditures, including those made by corporations, do not give rise to corruption or the appearance of corruption" (*Citizens United v. Federal Election Commission*).
- Led to a rise of Super PACs and dark money spending.
  - Outside spending: $3.3 billion in 2020, $4.5 billion in 2024

Citizens United v. FEC

- "Independent expenditures, including those made by corporations, do not give rise to corruption or the appearance of corruption" (*Citizens United v. Federal Election Commission*).
- Led to a rise of Super PACs and dark money spending.
  - Outside spending: $3.3 billion in 2020, $4.5 billion in 2024
  - Dark money spending: $1 billion in 2020, $1.9 in 2024

Historical Context (Continued)

5. *McCutcheon v. FEC* (2014)

Historical Context (Continued)

5. *McCutcheon v. FEC* (2014)
   - Aggregate cap of $\$123,000$

Historical Context (Continued)

5. *McCutcheon v. FEC* (2014)
   - Aggregate cap of $\$123,000$
   - Shaun McCutcheon

McCutcheon v. FEC

- The Supreme Court concluded that "the aggregate limits do not further the government's interest in preventing quid pro quo corruption or the appearance of such corruption" (*McCutcheon v. Federal Election Commission*).

McCutcheon v. FEC

- The Supreme Court concluded that "the aggregate limits do not further the government's interest in preventing quid pro quo corruption or the appearance of such corruption" (*McCutcheon v. Federal Election Commission*).
- Removed overall cap on individual contributions, but did not affect base limits on individual contributions to state and national party committees, PACs, and federal candidate campaigns.

Question

How do the magnitude and composition of campaign contributions affect a U.S. House candidate's probability of winning (and vote share)?

Objectives

- Examine trends over time of campaign finance spending

Objectives

- Examine trends over time of campaign finance spending
  - Heat map

Objectives

- Examine trends over time of campaign finance spending
  - Heat map
  - Line chart

Objectives

- Examine trends over time of campaign finance spending
  - Heat map
  - Line chart
- Build predictive models estimating a candidate's

Objectives

- Examine trends over time of campaign finance spending
  - Heat map
  - Line chart
- Build predictive models estimating a candidate's
  - Probability of winning

Objectives

- Examine trends over time of campaign finance spending
  - Heat map
  - Line chart
- Build predictive models estimating a candidate's
  - Probability of winning
    - Classification problem

Objectives

- Examine trends over time of campaign finance spending
  - Heat map
  - Line chart
- Build predictive models estimating a candidate's
  - Probability of winning
    - Classification problem
    - Baseline logistic

Objectives

- Examine trends over time of campaign finance spending
  - Heat map
  - Line chart
- Build predictive models estimating a candidate's
  - Probability of winning
    - Classification problem
    - Baseline logistic
  - Proportion/percentage of votes

Objectives

- Examine trends over time of campaign finance spending
  - Heat map
  - Line chart
- Build predictive models estimating a candidate's
  - Probability of winning
    - Classification problem
    - Baseline logistic
  - Proportion/percentage of votes
    - Continuous regression problem

Objectives

- Examine trends over time of campaign finance spending
  - Heat map
  - Line chart
- Build predictive models estimating a candidate's
  - Probability of winning
    - Classification problem
    - Baseline logistic
  - Proportion/percentage of votes
    - Continuous regression problem
    - Baseline linear

Objectives

- Examine trends over time of campaign finance spending
  - Heat map
  - Line chart
- Build predictive models estimating a candidate's
  - Probability of winning
    - Classification problem
    - Baseline logistic
  - Proportion/percentage of votes
    - Continuous regression problem
    - Baseline linear
  - In either case, may be nonlinear

Objectives

- Examine trends over time of campaign finance spending
  - Heat map
  - Line chart
- Build predictive models estimating a candidate's
  - Probability of winning
    - Classification problem
    - Baseline logistic
  - Proportion/percentage of votes
    - Continuous regression problem
    - Baseline linear
  - In either case, may be nonlinear
    - GAMs, ensemble methods

Objectives (Continued)

- Evaluate performance measures

Objectives (Continued)

- Evaluate performance measures
  - Classification: Accuracy, Precision, AUC

Objectives (Continued)

- Evaluate performance measures
  - Classification: Accuracy, Precision, AUC
  - Regression: RMSE, R-Squared

Objectives (Continued)

- Evaluate performance measures
  - Classification: Accuracy, Precision, AUC
  - Regression: RMSE, R-Squared
- From these models, gather quantitative results on

Objectives (Continued)

- Evaluate performance measures
  - Classification: Accuracy, Precision, AUC
  - Regression: RMSE, R-Squared
- From these models, gather quantitative results on
  - Marginal effect of $1 million dollars on probability of winning

Objectives (Continued)

- Evaluate performance measures
  - Classification: Accuracy, Precision, AUC
  - Regression: RMSE, R-Squared
- From these models, gather quantitative results on
  - Marginal effect of $1 million dollars on probability of winning
  - How source mix (Ex. Primary contributors are PACs vs. individual donors) affects expected vote share

Objectives (Continued)

- Evaluate performance measures
  - Classification: Accuracy, Precision, AUC
  - Regression: RMSE, R-Squared
- From these models, gather quantitative results on
  - Marginal effect of $1 million dollars on probability of winning
  - How source mix (Ex. Primary contributors are PACs vs. individual donors) affects expected vote share
  - Feature importance

Relevance

Businesses

- Provide ROI estimates on how dollars translate into votes
  - → Campaign strategists
  - → Consultancies
  - → Donors

Relevance

Businesses

- Provide ROI estimates on how dollars translate into votes
  - → Campaign strategists
  - → Consultancies
  - → Donors
- Associating certain sectors with candidates

Relevance

Businesses

- Provide ROI estimates on how dollars translate into votes
  - → Campaign strategists
  - → Consultancies
  - → Donors
- Associating certain sectors with candidates

Individuals

- Making more informed decisions

Relevance

Businesses

- Provide ROI estimates on how dollars translate into votes
  - → Campaign strategists
  - → Consultancies
  - → Donors
- Associating certain sectors with candidates

Individuals

- Making more informed decisions
- Anticipating policy outcomes

Relevance

Businesses

- Provide ROI estimates on how dollars translate into votes
  - → Campaign strategists
  - → Consultancies
  - → Donors
- Associating certain sectors with candidates

Individuals

- Making more informed decisions
- Anticipating policy outcomes
- Obtaining better information on an organization's political leanings based on where money goes

Theories

Economic:

- Production Function Models — Treats campaign spending as an input in a production process, with votes/win-probabilities as the output (Jacobson and Kernell).

Theories

Economic:

- Production Function Models — Treats campaign spending as an input in a production process, with votes/win-probabilities as the output (Jacobson and Kernell).
- Marginal Analysis — Describes changes in vote share given a change in spending, all else constant.

Theories

Economic:

- Production Function Models — Treats campaign spending as an input in a production process, with votes/win-probabilities as the output (Jacobson and Kernell).
- Marginal Analysis — Describes changes in vote share given a change in spending, all else constant.
- Public Choice/Rent-Seeking — Firms and interest groups treat contributions as investments to influence policy decisions (**becker1983competition**).

Theories (Continued)

Political Science:

- Spatial Utility Politics — Voters choose candidate whose ideological position maximizes expected utility.

Theories (Continued)

Political Science:

- Spatial Utility Politics — Voters choose candidate whose ideological position maximizes expected utility.
- Persuasion — Campaigns influence which issues voters consider important and how their beliefs are updated.

Theories (Continued)

Political Science:

- Spatial Utility Politics — Voters choose candidate whose ideological position maximizes expected utility.
- Persuasion — Campaigns influence which issues voters consider important and how their beliefs are updated.

Institution:

- Regulatory Impact — Analyzes how changes in campaign finance law alter supply and returns to contribution spending (Stratmann).

Data

- Adam Bonica's DIME (1979–2024)

Data

- Adam Bonica's DIME (1979–2024)
  - U.S. House

Data

- Adam Bonica's DIME (1979–2024)
  - U.S. House
  - Almost 500 GB

Data

- Adam Bonica's DIME (1979–2024)
  - U.S. House
  - Almost 500 GB
  - Three main tables

Data

- Adam Bonica's DIME (1979–2024)
  - U.S. House
  - Almost 500 GB
  - Three main tables

1. Donation recipients
2. Donation contributors
3. Contributions

Data

- Adam Bonica's DIME (1979–2024)
  - U.S. House
  - Almost 500 GB
  - Three main tables
  1. Donation recipients
  2. Donation contributors
  3. Contributions
- Preparation
  - Identify relevant variables
  - Extract observations to be used
  - Handle missing values

Limitations

- Incomplete/Missing Data

Limitations

- Incomplete/Missing Data
- Causality Interpretation

Limitations

- Incomplete/Missing Data
- Causality Interpretation
- Inflation

Limitations

- Incomplete/Missing Data
- Causality Interpretation
- Inflation
  - Consumer Price Index

Conclusion

Summary:

- ✓ Financial Environment in Politics/Government
- ✓ Modeling Methods and Relevance

Next Steps:

- ✓ Data Preparation
- ✓ Model Implementation
- ✓ Results Analysis

References I

- *Buckley v. Valeo*. https://www.fec.gov/legal-resources/court-cases/buckley-v-valeo/. Decided January 30, 1976, 1976.
- *Citizens United v. Federal Election Commission*. https://www.fec.gov/legal-resources/court-cases/citizens-united-v-fec/. Decided January 21, 2010, 2010.
- Jacobson, Gary C., and Samuel Kernell. *Strategy and Choice in Congressional Elections*. Accessed May 25, 2025. Yale University Press, 1983.
- *McCutcheon v. Federal Election Commission*. https://www.fec.gov/legal-resources/court-cases/mccutcheon-et-al-v-fec/. Decided April 2, 2014, 2014.

References II

- Stratmann, Thomas. “Some Talk: Money in Politics. A (Partial) Review of the Literature”. Accessed May 25, 2025, *Public Choice* 124, **numbers** 1-2 (2005): 135–156. https://doi.org/10.1007/s11127-005-2590-3.
- The Campaign Finance Institute. “Revised and Updated 2008 Presidential Statistics”. Accessed May 25, 2025, Oct. 2008.