

Online Appendix for: Conceptualizing and Measuring Early Campaign Fundraising in Congressional Elections

Contents

A	Supplemental Tables & Figures	1
B	Data Cleaning & Preparation	6
C	Candidate-Centered Measurement: Start Date	7
D	Candidate-Centered Measurement: Window Length	8
E	Data Considerations: FEC Quarterly Reports	9

A Supplemental Tables & Figures

Table A1: Existing Measures for Early Campaign Fundraising

Type	Early Fundraising Definition	Citing Literature
Calendar-Centered	All Funds On Hand at the Beginning of the Election Cycle	Squire (1991); Box-Steffensmeier and Franklin (1995); Goodliffe (2001, 2004, 2007); Herrnson et al. (1998)
	All Funds Raised by June 30th in the Year Prior to the Election	Burrell (1994); Krasno et al. (1994); Bell et al. (2009)
	All Funds Raised in the Year Prior to the Election	Goldenberg et al. (1988); Krasno and Green (1988); Hersch and McDougall (1994); McCarty and Rothenberg (2000); Adkins and Dowdle (2005); Smidt and Christenson (2011, 2012); Magleby et al. (2018); Thomsen (2022)
	All Funds Raised 90, 180, and 360 Days Prior to Primary Election	Patterson Jr. (2020)
	All Funds Raised 8/9 Months Prior to Primary Election	Leal (2003)
	All Funds Raised Prior to Filing Deadline	Hogan (2001)
	All Funds Raised Prior to Primary	Damore (1997); Hannagan et al. (2010); Bonica (2017); Thomsen (2023); Porter and Treul (2024)
Candidate-Centered	Receipts in Candidate's first filed FEC Quarterly Report(s)	Biersack et al. (1993); Francia (2001); Thomsen (2023)
	30, 60, 90 or 180 days from filing of statement of candidacy	Bonica (2017, 2020)
	60 or 90 days from first itemized contribution on record with FEC	Porter and Steelman (2023)
	Earliest 20% of campaign receipts	Vonnahme (2014)
	Earliest 33% of campaign receipts	Babenko et al. (2022)
	First 50 Donations to a Candidate	Bonica and Grumbach (2022)

Figure A1: Pairwise Correlations for Popular Early Money Measures

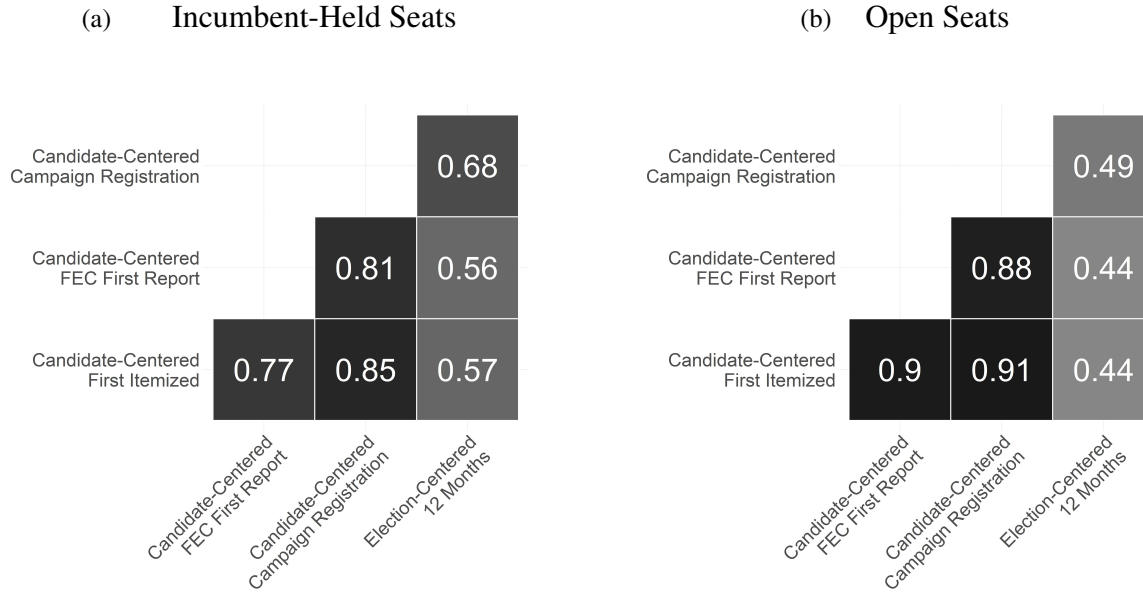


Table A2: Prop. of Candidates Who Garnered their First Itemized Receipt Relative the Primary

Months Prior to Primary	All GE Winners	Non-Incumbent GE Winners	Quality Challengers
12 months	0.879	0.346	0.243
11 months	0.894	0.413	0.304
10 months	0.906	0.481	0.376
9 months	0.913	0.514	0.440
8 months	0.924	0.576	0.501
7 months	0.936	0.646	0.571
6 months	0.948	0.708	0.637
5 months	0.960	0.775	0.712
4 months	0.973	0.848	0.799
3 months	0.986	0.922	0.894
2 months	0.999	0.992	0.981
1 month	1.000	0.997	0.996

Figure A2: Average Timing of Fundraising Windows Across Modes for Measurement

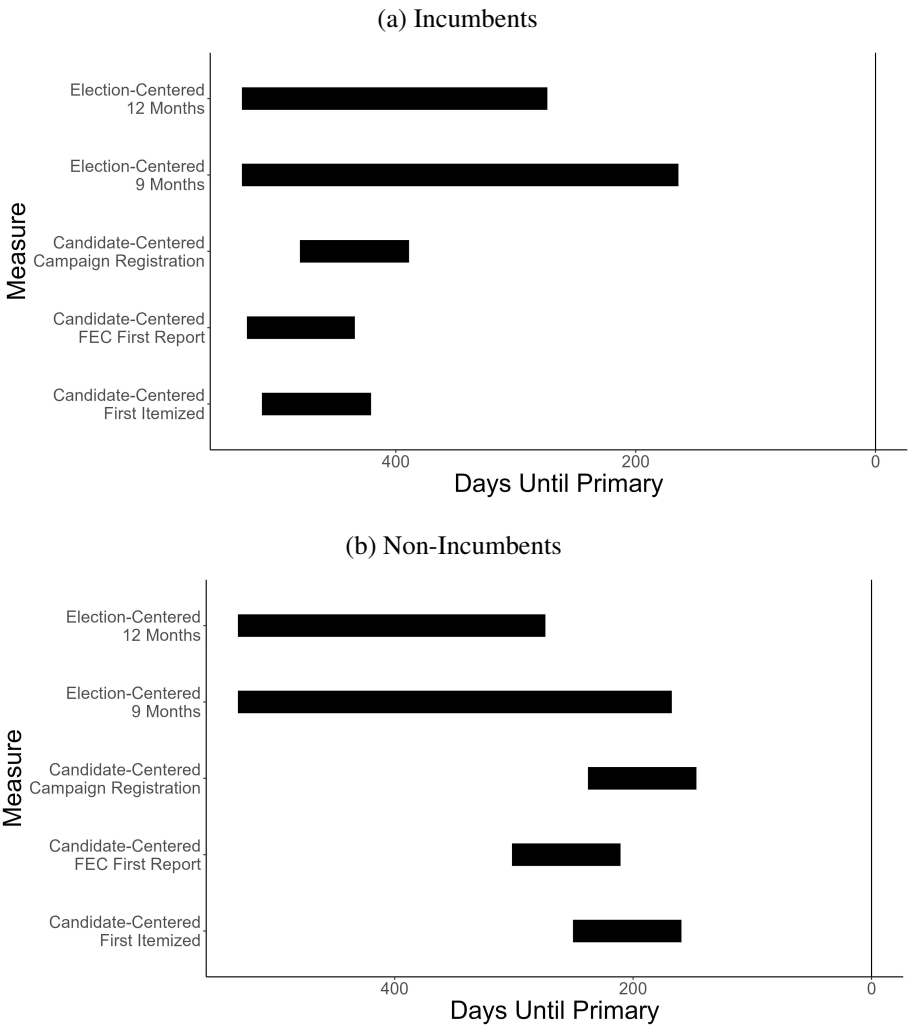
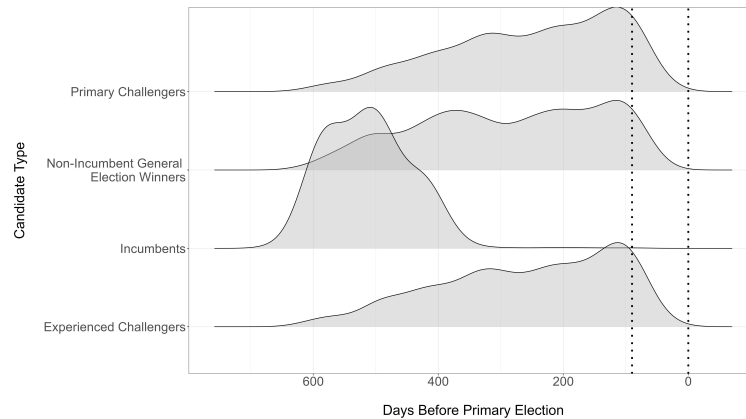


Figure A3: Timing of First Itemized Contribution (in Days) Relative to Primary Election



Note: Units of analysis include all candidates considered active by the FEC (i.e., campaigned during the election cycle and exceeded the \$5,000 reporting threshold). The x-axis reflects a standardized election timeline, from 675 days until the primary election (left) until the primary election date (right). The y-axis reports the density of candidates whose first itemized campaign contribution was received on a given day relative to the primary. Plots are presented by candidate type, given that certain kinds of candidates (i.e., those who are mounting a professional, viable campaign) will systematically begin fundraising sooner than long-shot candidates who have little chance at winning. To provide a point of reference, the vertical dotted lines indicate 90 days and 0 days until the primary election.

Figure A4: Congressional Primary Election Dates by Month

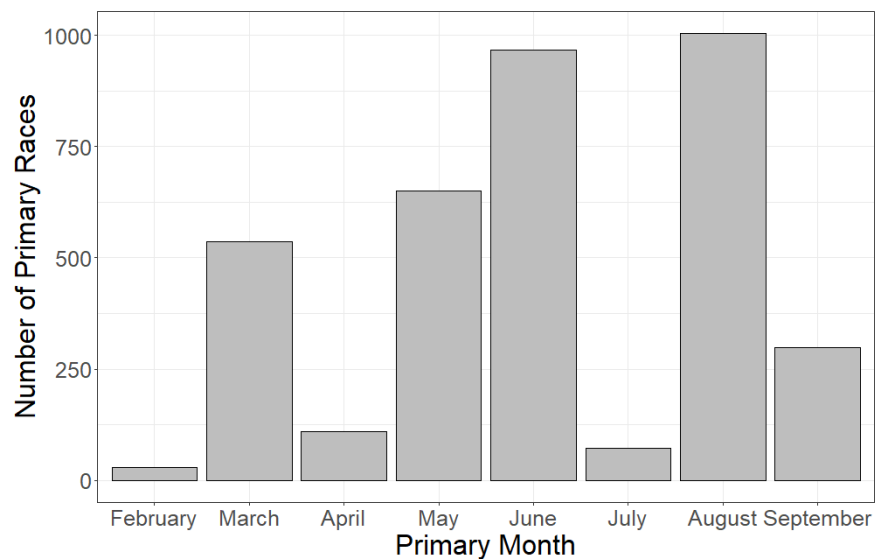
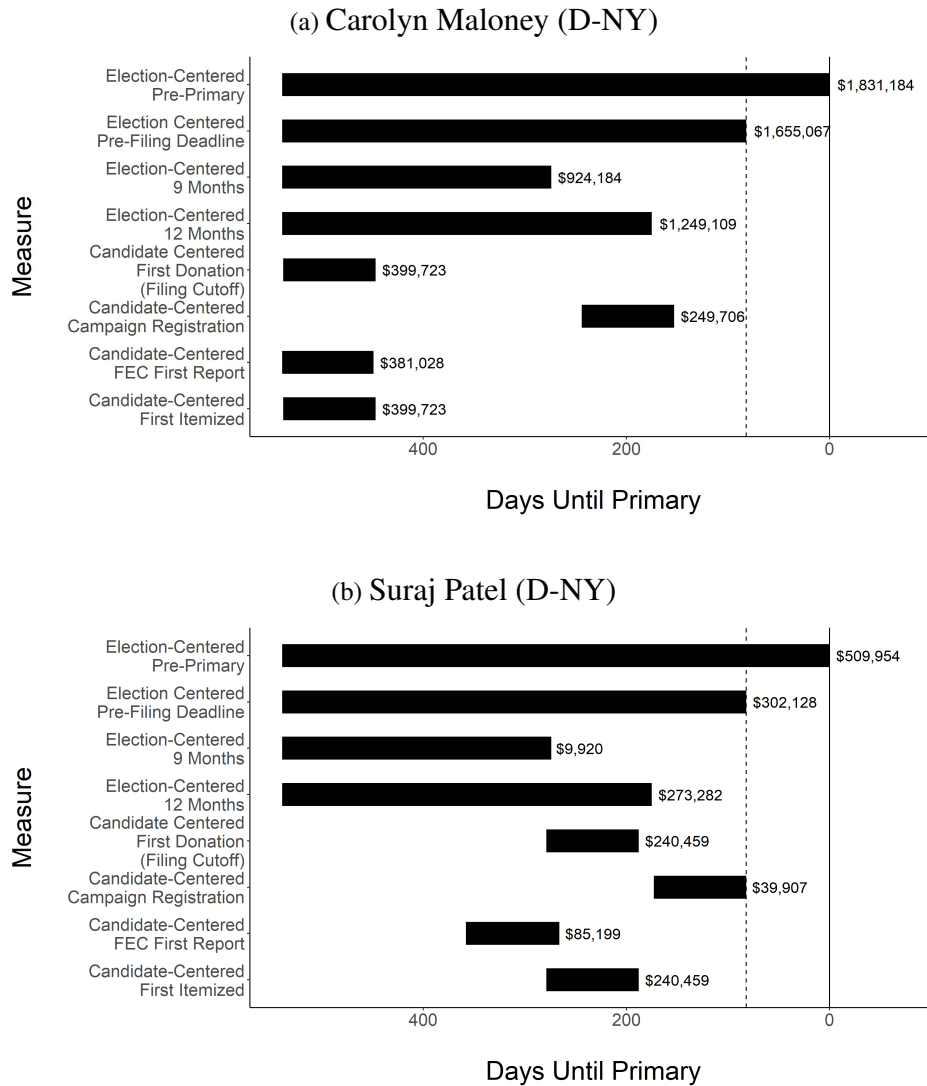


Figure A5: Timing of Fundraising Windows & Estimates for Early Fundraising Across Extant Measurement Strategies



Note: Figure depicts the start and end date of early fundraising for Carolyn Maloney (Figure A5a) and Suraj Patel (Figure A5b) in the NY-12 Democratic primary in 2020 for the early money measures present in Figure 1 and our proposed measures. The solid vertical line represents the date of the primary election and the dashed vertical line represents the date of the filing deadline. All fundraising totals are produced using itemized fundraising data from OpenSecrets and unitemized fundraising totals reported in FEC quarterly reports. See Appendix Section B for greater details.

B Data Cleaning & Preparation

To produce the analyses in this manuscript, we rely on data provided by OpenSecrets on U.S. House candidates' itemized contributions for elections occurring in 2010 through 2020. We elected to employ data from OpenSecrets on itemized contributions rather than raw data from the Federal Election Commission because it has been cleaned of double-counted contributions, candidate names are standardized across election years, and other important metadata are included. In pre-processing our data, we adopt the best practices proposed by OpenSecrets by excluding non-contributions, independent expenditures, and tribe contributions. We take several additional steps, dropping candidates whose total pre-primary contributions did not total to \$5,000 and excluding itemized contributions that were raised before the previous election for the subsequent cycle.

To calculate candidates' total early receipts totals, we summed itemized contributions received by candidates inclusively beginning on a candidate's fundraising window start-date and ending on their fundraising window end-date. A contribution from a donor to a candidate is itemized when it exceeds \$200 or aggregates over \$200 when added to other contributions received from that same donor during the election cycle. Itemized contribution amounts reported in OpenSecrets' data reflect amendments made by candidates and givers to the Federal Election Commission. In calculating fundraising totals, we follow FEC reporting procedures employed by candidates' campaign treasurers when generating quarterly reports (i.e., we report gross funds raised and exclude refunds). For greater detail on FEC reporting procedure, see: <https://www.fec.gov/help-candidates-and-committees/filing-reports/election-cycle-aggregation/>.

When generating candidates' early fundraising totals, we also incorporate data on smaller, *unitemized* campaign contributions. For most candidates, data on unitemized contributions are only available as aggregated totals reported in FEC quarterly reports. To employ these data across fundraising periods that do not perfectly align with the timing of quarterly reports, we follow Bonica's (2020) interpolation approach. We first calculate daily totals in unitemized fundraising by dividing aggregate totals from quarterly reports by the number of days in that quarter. It is important to note that the denominator in this calculation is not always 90 days (i.e. three months): a candidate's first fundraising quarter may be significantly longer or shorter than this number of days.¹ Based on the number of fundraising days a candidate had in their first quarterly report, daily unitemized fundraising totals are then multiplied by the number of days in a candidate's fundraising window. If a candidate has a fundraising window that falls over two different quarters, then unitemized receipt totals are multiplied by the number of days shared by the fundraising window and that particular quarter; these totals are then summed together. Although some candidates elect to provide the FEC with *all* campaign contributions in the form of itemized receipts, employing aggregate unitemized totals for some candidates and disaggregated receipts for others is fraught with issues (for more discussion, see Alvarez et al. 2020).

¹Many candidates running for Congress begin fundraising in the middle of a FEC reporting period; accordingly, these kinds of candidates will report a first fundraising quarter that is shorter than 90 days. Additionally, in every election cycle, a minority of candidates begin fundraising before they actively run for office, raising and spending money to assess campaign viability. During this so-called "testing the waters" period, candidates are not required to report fundraising to the FEC—even if their receipts total over \$5,000. Once a candidate decides to become "active" and officially registers their campaign with the FEC they must report all funds raised, including those generated when "testing the waters." These kinds of candidates will report a first fundraising quarter that is longer than 90 days.

C Candidate-Centered Measurement: Start Date

There is consensus that, for contributions to be early, they should be among a candidate's first receipts. Capturing a candidate's earliest contributions in a measure for early fundraising is foundational to the conception that early funds are the "seeds" for campaign success. Similarly, to map the kinds of political influencers who are active in the "money" or "invisible" primary, an early money measure should reflect those first donors who backed a candidate's campaign from the start. Extant candidate-centered measures employ several kinds of campaign behaviors to mark the beginning of a candidate's early fundraising window. However, the extent to which these different fundraising window start-dates capture a candidate's first donations has not been examined.

In Table A3, we present the proportion of candidates whose first itemized campaign receipt occurred within fundraising windows specified using a variety of start dates.² The left column defines a candidate's fundraising window as beginning when she files paperwork to register her campaign with the FEC. The middle column defines a candidate's fundraising window as starting on the coverage start date recorded in her first filed FEC quarterly report. The right column defines a candidate's fundraising window beginning when she receives her first itemized contribution. We specify a 90-day fundraising window for the "FEC Registration" and "First Itemized Donation" early money measures in Table A3. As our analysis in Appendix Section E demonstrates, the effective fundraising window length captured in the "First FEC Report" measure varies by the candidate. Given that the timing of a candidate's fundraising may vary based on her personal characteristics or electoral context, we produce first-donation proportions for a variety of candidate types, including general election winners, incumbents running for reelection, non-incumbents, and quality candidates (i.e., non-incumbents who previously held publicly elected office).

The proportions reported in the left column of Table A3 demonstrate that the "FEC Registration" measure systematically fails to capture the first receipts raised. This is partly because candidates are not required to register their campaigns with the FEC until they exceed the \$5,000 candidate registration threshold. Accordingly, if a candidate waits to register her campaign until the threshold is met, all receipts garnered before that point will be excluded from her early fundraising total. The total amount of receipts raised before campaign registration may even *exceed* \$5,000 if a candidate "tests the waters" and fundraises extensively before beginning to campaign actively.³ Additionally, the "FEC Registration" measure may fail to capture the initial receipts for candidates who do not file their campaign registration paperwork punctually.⁴ We identified 1,091 or 18% of all candidates as "delinquent" statement filers—these individuals had met federal requirements that compelled them to register their candidacy with the FEC but failed to do so on time.⁵ Candi-

²Unitemized contributions are reported as a bulk sum in quarterly reports; while some candidates elect to itemize all campaign receipts—including small donations—we do not have systematic data on these contributions for all candidates. Because we lack consistent data on receipt dates for unitemized contributions across all candidates, we follow the guidance by Alvarez et al. (2020) and exclude such contributions from this analysis.

³A candidate is not considered active by the FEC until she engages in campaigning (e.g., refers to themselves as a candidate, takes steps to qualify for the ballot, or engages in advertising) at which point she becomes "active."

⁴When registering their campaign with the FEC, individual candidates must submit a Statement of Organization and a Statement of Candidacy. According to an interview conducted by the authors with a staff specialist at the Federal Election Commission, candidates often forget to file one of these two forms, thus leaving their official declaration of candidacy incomplete and setting back their registration date until this paperwork is complete.

⁵Once a candidate begins actively campaigning for office and reaches the FEC's \$5,000 financial threshold she is required to submit campaign paperwork and is subsequently subject to FEC reporting requirements. We would consider a candidate delinquent if she did not submit her candidacy paperwork when she began filing quarterly reports

Table A3: Proportion of Candidates Whose First Itemized Campaign Receipt Falls Within Fundraising Window

Type of Candidate	FEC Registration	First FEC Report	First Itemized Donation
General Election Winners	0.43	0.98	1.00
All Primary Candidates	0.43	0.88	1.00
Incumbents	0.44	0.99	1.00
Non-Incumbents	0.42	0.82	1.00
Quality Candidates	0.37	0.89	1.00

Note: Numerators in calculated proportions reflect the number of candidates whose first itemized campaign receipt was captured by extant candidate-centered measures of early fundraising. The denominator in this analysis includes all candidates considered active by the FEC prior to their primary.

dates who filed their statement of candidacy late were, on average, significantly delinquent—about a full reporting quarter behind schedule.

Turning next to the middle column of Table A3, the “First FEC Report” measure captures the initial itemized receipt for most candidates. Instances in which a candidate’s first quarterly report did not capture her first itemized receipt are attributable to cases where a candidate’s first report to the FEC included only unitemized contributions or disbursements. Additionally, a small number of candidates file quarterly reports when they are not “active” (i.e., have not met the threshold necessary for disclosing receipts and disbursements). These premature filers may report no itemized receipts in their first FEC report.

Per the right column of Table A3, we find that the “First Itemized Donation” measure perfectly captures the initial itemized receipt a candidate fundraises. This is to be expected given that the “First Itemized Donation” measure uses a candidate’s first itemized receipt as the basis for the start of her fundraising window.

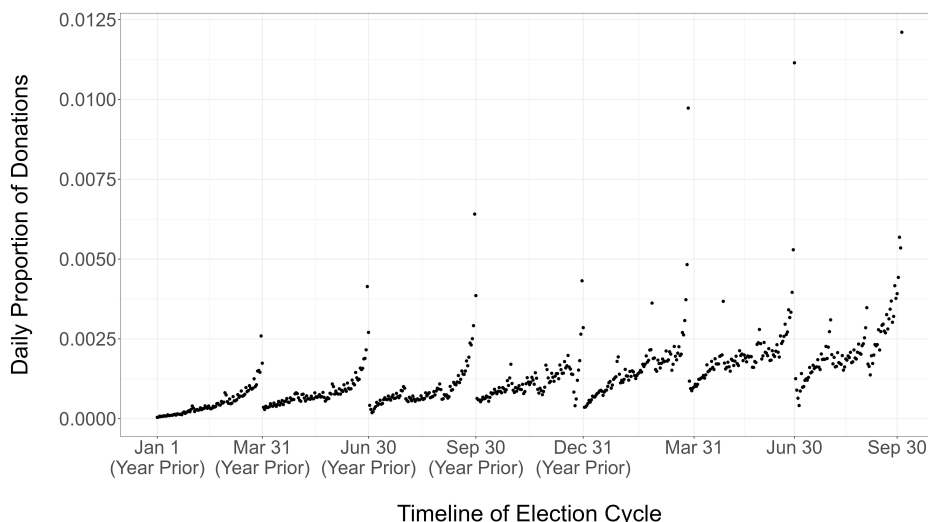
D Candidate-Centered Measurement: Window Length

For a candidate-centered measure to aptly capture a candidate’s initial receipts, it should include only the beginning “seeds” of fundraising success and not reflect a protracted period of a candidate’s fundraising campaign. Research on early fundraising has focused on money raised by candidates over windows spanning anywhere from 60 days to 180 days. The selection of fundraising window lengths in recent work has primarily been rooted in precedent from prior work, which lacks empirical substantiation (e.g., Biersack et al. 1993 and Porter and Steelman 2023).

To explore a data-driven rationale for determining fundraising window length, Figure A6 plots trends in the timing of campaign contributions received by U.S. House candidates. The x-axis reflects a standardized election timeline from the beginning of the cycle (left) to the end (right). The y-axis reports the proportion of donations made to candidates on a given day out of the total number of donations made to all candidates across U.S. House elections held from 2010 to 2020. Per Figure A6, there is a gradual increase in the daily proportion of donations that candidates receive as the election cycle progresses. Perhaps more notably, Figure A6 also shows that daily donations in-

with the FEC (i.e., she regarded herself as an “active” candidate). For an example of this timing, see Figure 2 as both Carolyn Maloney and Suraj Patel filed their registration paperwork delinquently.

Figure A6: Proportion of Campaign Contributions Received Daily By Candidates for the U.S. House of Representatives, 2010-2020



Note: Proportions on the y-axis reflect the number of donations made to candidates on a given date out of all donations made to all candidates running in elections for the U.S. House of Representatives from 2010 to 2020. The x-axis is a standardized election timeline, from the beginning of the cycle (left) to end (right).

crease exponentially in about 90-day increments. These punctuated increases align with deadlines for reporting campaign financial activity to the FEC.⁶ This relationship between House candidate fundraising and FEC reporting deadlines aligns with work by Smidt and Christenson (2012) and Magleby et al. (2018), who show a similar pattern in presidential campaign fundraising.

E Data Considerations: FEC Quarterly Reports

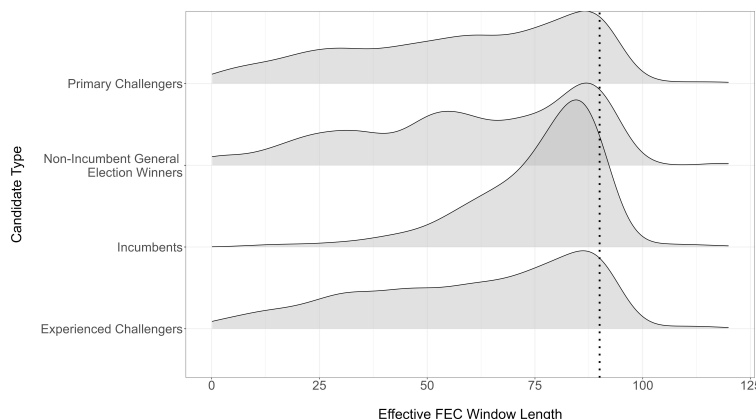
Using quarterly FEC reporting deadlines to define a candidate's early fundraising period has some notable advantages. The size and scale of itemized data on campaign receipts makes calculating custom fundraising totals for each candidate in each election computationally arduous;⁷ downloading and extracting fundraising totals from FEC Quarterly Reports is a more manageable task. It is for this reason that some studies rely on these line item totals as a measure for early fundraising (e.g., Biersack et al. 1993; Francia 2001; Thomsen 2023).

The use of FEC quarterly reports to measure early fundraising however, does have some important limitations, particularly for candidate-centered early fundraising. Given that quarterly reports align with FEC reporting periods, they should, in theory, reflect a consistent fundraising window. However, we find that the span of time captured in a candidate's first FEC quarterly report often exceeds or falls short of 90 days. The number of days covered in a first filed quarterly report will be shorter than a full quarter if a candidate does not begin fundraising on the first day of the reporting

⁶FEC reporting deadlines fall on the last day in March, June, September, and December. Recall that a candidate must register her campaign and file quarterly reports with the FEC once she (1) begins campaigning for office and (2) exceeds \$5,000 in campaign receipts and/or disbursements.

⁷For the authors to download bulk data from the FEC on itemized campaign receipts, query the FEC API for unitemized contribution totals, and loop over these data to calculate customized early fundraising totals for each candidate in our data set took approximately 48 hours, absent the writing of code.

Figure A7: Effective Window Length of Candidates' First Filed FEC Quarterly Report



Note: The x-axis denotes the number of fundraising days covered in each candidate's first filed report. The y-axis in Figure A7 measures the number of U.S. House candidates who ran in elections from 2010 to 2020 who had a given FEC window length. Per the FEC, the start of the coverage period for a candidate's first filed quarterly report dates to the beginning of that candidate's financial activity. The coverage period ends on the reporting deadline for the quarterly reporting period where she became an "active" candidate. To provide a point of reference, the vertical dotted line indicates a 90 day coverage window.

period. Recall from the NY-12 example shown in Figure 2b, Suraj Patel received his first itemized donation on September 18th, shortly before the FEC's reporting deadline for fall of 2019. Accordingly, the effective fundraising window length for Patel's first filed quarterly report was only 13 days. Like Patel, about 20% of candidates in our data began fundraising less than 45 days before their initial FEC reporting deadline. This trend is not isolated to hopeless candidates either—26% of non-incumbent general election winners started fundraising less than 45 days before their first FEC reporting deadline. The number of days covered in a first quarterly report will be longer than a full quarter if a candidate fundraises extensively before registering her campaign with the FEC. In our data, about 6% of candidates had a first quarterly report that covered more than the standard reporting period.⁸ Candidates who are "testing the waters" for a potential campaign are not required to report any fundraising to the FEC until their campaign becomes "active."⁹ Once campaign activity begins candidates must report all pre-campaign contributions, which results in a longer coverage period.

⁸The full distribution of effective FEC fundraising window lengths are available in Figure A7. As we show, there is variation in the fundraising window length across all subsets of candidates, including all primary challengers, non-incumbent general election winners, incumbents, and experienced challengers.

⁹A candidate is not considered active by the FEC until she engages in campaigning (e.g., refers to themselves as a candidate, takes steps to qualify for the ballot, or engages in advertising).