DONOR NETWORKS AND THEIR INFLUENCE IN CONGRESSIONAL PRIMARIES 1980-2014

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Abstract

We study political contributions in congressional primary elections from 1980-2014 to explore whether partisan elites help advance the nomination of preferred candidates. We theorize that political parties reflect coalitions of interest groups and activists who screen candidates for their loyalty to the coalitional agenda. Using network community detection methods, we identify interconnected clusters of donors active in advancing candidates for the party nomination. Surprisingly, we find that a majority of PACs constitute a fairly bipartisan contributor community that influences the nomination. Individuals are much more partisan in their giving and tend to be integrated into smaller, more fragmented communities. The proportion of candidates in PAC-dominated communities has declined substantially since the 1980s. More critically, the proportion of early contributions by individuals has grown significantly, increasing fragmentation in the network. We conclude that the character of financial gatekeepers for party nominations has changed substantially, with potential implications for partisan polarization.
Since the demise of political machines in the U.S., the political parties have nominated U.S. congressional candidates through primary elections. Historically, primaries were instituted by Progressive reformers to give voters rather than party bosses a direct say in who stands for the party in the general election. Nonetheless, research suggests that partisan elites continue to have an influence on the primary selection process (Cohen et al. 2008; Dominguez 2005; Masket 2009). In theory, partisan elites representing various factions of the party possess the resources and reputation to promote the selection of candidates who espouse their preferred policy objectives (Bawn et al. 2012). On the other hand, recent empirical studies of congressional primaries suggest that these elections are relatively uneventful except in rare circumstances. It has been reported, for example, that primary challengers typically receive support from local constituencies, friends, and neighbors rather than national interest groups, except in the most unusual situations (Boatright 2013). This implies that there is little systematic effort by party elites to control the nomination, at least with respect to providing key financial support (but see Dominguez 2005).

The mismatch between theory and practice presents a formidable puzzle. Except for Hassell (2015), who focuses exclusively on individual donors to the party organizations, we are not aware of any empirical accounts of campaign finance that demonstrate robust and systematic efforts by subsets of contributors to shape the outcome of congressional primaries across a range of elections. How do we reconcile the theoretical understanding of how party elites try to control nominations with the documented lack of primary activity and influence? In this study, we closely examine patterns of political contributions in congressional primaries over 17 election cycles to assess whether elite networks of contributors (1) systematically supports party nominees through election financing and (2) make an impact on primary election outcomes.
To advance the analysis, we draw on research using network analysis that conceptualizes political parties as dynamic, dispersed systems of interconnected interest groups and activists, centered on traditional formal party organizations, which Koger, Masket, and Noel (2009) term *Extended Party Networks* (EPN). Others have advanced a broader theoretical framework positing that the central functions of the political party are to select and support candidates who, based on their backgrounds, are deemed likely to advance the policy agenda of the party’s coalition of organized interests once in office (Cohen et al. 2008; Masket 2009; Herrnson 2009; Koger, Masket, and Noel 2009; Skinner, Masket, and Dulio 2012; Bawn et al. 2012).

Our goal is to identify the EPNs that offer support to preferred candidates in primary elections and to assess whether such support helps nominees succeed in primaries. We examine whether support by the EPN helps nominees above and beyond other factors that tend to advance candidacies, including the total amount of money they spend. This builds on previous work examining the support for challengers by the EPN in general elections, which has been demonstrated to significantly boost prospects on Election Day (Desmarais et al. 2015). The current analysis looks further back in the electoral process to examine the formation of EPN efforts to advance particular candidates for the party nomination. The party nomination is not only the point in the process at which parties choose their “team”, it is also likely to be the election that determines who sits in Congress because the partisan balance of voters in most districts heavily favors one party in the general election.

While there has been excellent recent work on financiers of congressional primaries (e.g., Boatright 2013; Hassell 2015), the overall lack of scrutiny in this area seems odd given that the study of money in general elections has been so robust. One possible reason for the inattention to campaign finance in congressional primaries is that these elections are infrequently competitive.
and data are sometimes difficult to come by. But these issues are not insuperable obstacles to good analysis. We know that money influences general elections in complex ways (e.g., Jacobson 1980), and though primaries differ from general races in key respects, we should expect campaign financing to play a similarly important function in the primary nomination process (Bonica, forthcoming). Indeed, it could be argued that it plays an even more powerful role given the relatively low salience of primary elections, the lack of attention primary campaigns receive from the media, and the absence of party cues that frequently drive voter decisions.

We focus on outcomes in US House primary elections from 1980 to 2014. Political contributions and spending by organizations and individuals provide a robust measure of the intensity of support for candidates, while allowing us to distinguish behaviors among a broad population of donors seeking to influence numerous federal elections. We draw on the framework of network analysis to operationalize the extended party network using data on individual and group contributions to, and independent spending for, candidates for the U.S. House of Representatives. We then identify donors with similar contribution patterns through a ‘community detection’ (Newman, 2006) algorithm that is informed by the structure of advocacy that underlies the theory of extended party networks. We detect communities that include unique subsets of both donors and candidates.

We document two notable trends. First, primary giving by PACs consistently exhibits a surprising degree of bipartisanship, with a majority of primary PAC contributions coming from contributors that allocate a significant portion (20-30%) of their contributions to their less-favored party. The bipartisan behavior of many PACs (even if they favor one party) fits with an extensive literature that views PACs---especially business organizations---as access seeking
rather than ideologically motivated contributors (e.g. Biersack, Herrnson and Wilcox 1993; Herrnson 1998; Stratmann 2002; Lowery and Brasher 2004). In our network analysis, we find that in all election cycles a majority of PACs belong to one or two large, central, and relatively bipartisan communities of candidates and donors. Importantly, candidates within these communities – and thus candidates who receive the support of these fairly bipartisan contributors – are statistically more likely to win the nominating contest, controlling for the level of funding and the contest in which the candidate is competing. Our finding is surprising in that the network of contributors that operates like the extended party network---supporting a coherent set of candidates who then exhibit a heightened rate of success in their primaries---includes a large proportion of groups that pursue somewhat bipartisan strategies. However, the role of this somewhat bipartisan community in helping to select candidates has been declining since at least the early 1990s.

Second, we observe in contrast that giving by individuals is consistently partisan. An overwhelming majority (70-80%) of contributions coming from individuals who give to more than one candidate give only to candidates from a single party. We note that giving by individuals has grown significantly over time – especially recently – relative to PAC contributions. As a result, fewer candidates are included in the dense, central PAC coalitions that we show are effective in helping candidates win elections. Instead we now observe smaller, more diffuse contribution communities that are dominated by individual donors.

The findings have implications for trends related to partisan polarization, although we do not demonstrate such links in this study. It is plausible that emerging donations patterns in the nomination process have contributed to polarization due to the growth of individual-based support for primary campaigns and the concurrent breaking up of centrist PAC coalitions that
were at one time dominant in financing primary campaigns. In this way, the diminishing mediating role of centrist PACs could be a source of fragmentation and polarization of the American party system.

**Financing Congressional Primaries and Extended Party Networks Theory**

A primary election is one means of selecting candidates from a party to run in the general election. These types of elections emerged through political reforms during the Progressive Era as a way to challenge the power of party bosses who controlled nominations. The goal of primaries was to allow voters to choose party nominees rather than party insiders. Despite opening the process to voters, however, the reality has been that citizen participation rates in primaries have never been very high (e.g. Brady, Han and Pope 2007). Additionally, electoral competition in primaries has declined significantly since the 1940’s (Herrnson 1998; Ansolabehere et al. 2010). These dynamics suggest that primaries are opportunities for a relatively small subset of voters and political elites to shape the nomination. In presidential primaries, for example, it has been argued that partisan elites shape the nomination through coordination of endorsements (Cohen et al. 2008). In legislative elections, studies indicate that networks of partisans coordinate on recruitment and endorsements, as well as provide expertise and resources (Dominguez 2005; Masket 2009). Broader theoretical arguments make claims that the efforts of activists in the extended party network to support such candidates will shape the ideological character and policy agenda of the party in government (Bawn et al. 2012).

The question posed in this paper is whether a core set of donors, either individuals and/or groups, converges systematically on particular types of candidates to help them win primaries. This finding would reveal empirically an important aspect of a theory about parties as extended partisan networks (EPN). Our purpose is to identify the EPN that potentially shapes the direction
of the party through the nomination process. As Schattscheider wrote trenchantly, “He who controls the nomination owns the party” (Schattschneider, 1942). To the degree that a group of elites or a subset of voters selects the party nominee it can be said that they “own” the party with respect to its aims and actions. Partisan activity is more diffuse since the early days of the 20th century when the party selection process took place within the formal party organization. In contemporary US politics, partisan interest groups and activists with significant electoral resources enjoy an influential role in the selection process.

Despite the well-documented resurgence of congressional political parties (Herrnson 1988; Aldrich 1995; Heberlig and Larson 2012), contemporary research addressing congressional election outcomes offers little to say about the impact of party organizations, or any coordinated political efforts beyond individual campaigns (see, e.g., Lazarus 2008; Woon and Pope 2008; Jones 2010). Of course, partisanship (e.g., of candidates, districts, the presidency and Congress) plays an essential role in every account explaining outcomes in congressional elections (Jacobson 1989; Canes-Wrone, Brady, and Cogan 2002; Woon and Pope 2008). This dichotomy – the prevalence of partisanship and the absence of party organization – fits well with the politician/candidate centered understanding of political parties. That is, parties arise in response to the needs of policymakers, mainly legislators serving in the same body, to coordinate policy agendas in order to win individual gains through mutual support (Aldrich 1995). Thus, according to the dominant theoretical understanding of the genesis of political parties, parties are organizations born out of service to legislators, with the central organizational focus being the top-down enforcement by the party leadership of adherence to a unified policy agenda and deterrence of intra-party conflict (Cox and McCubbins 1993).

The theory of extended party networks, offered by Cohen et al. (2008) and Bawn et al.
(2012), holds that parties arise from the benefits that organized interests realize from aggregating agendas and coordinating resources in pursuit of electoral and policy goals. Specialized interests that are relatively rich in resources typically have very narrow policy objectives (e.g., support entitlement programs for retirees, zone more offshore space for oil drilling, oppose gay marriage). Substantial resources would be wasted if organized interests pursued separate candidates corresponding to each individual group’s agenda. To avoid this waste, policy demanders in pursuit of separate agendas that are compatible, or at least not contradictory, agree to pool resources in support of candidates who will represent combined agendas. This combination of agendas becomes the party platform and the separate interest communities become the coordinated base of support and activism for the party. They do this, for example, through fund-raising networks (Koger, Masket, and Noel 2009) and high-level campaign workers (Kolodny and Dwyre 1998; Bernstein 1999). We also know that parties spend considerable effort recruiting strong candidates (Canon 1993; Herrnson 1988; Herrnson and Gimpel 1995; Kazee and Thornberry 1990; Kazee 1994; Jewell 1999; Sanbonmatsu 2006). However, we have seen nothing about the characteristics of donors and their potential role as key selectors in the nomination process.

A common collective action motivation underlies party formation in both the candidate-centered and extended party network theories of political parties. That is, parties arise because there are several political actors in pursuit of narrow policy objectives, who will rarely achieve success if they go it alone. The party forms as a collective action solution in which each actor achieves more than would be possible in solitary pursuit, in exchange for supporting the goals of other members of the party. The two theories diverge when it comes to (1) the actors who require a collective action solution and (2) who benefits from party formation. In the candidate-centered
theory, policymakers form a coalition (i.e., party) in order to achieve policy objectives that appeal directly to their constituents and therefore secure re-election (Aldrich 1995). In the party network theory, active special interests benefit from coordinating and standing behind candidates in the form of a party, and thus secure benefits for their group members (Cohen et al. 2008).

**Extended Party Networks and Congressional Primary Elections**

The main challenge in achieving successful coordination among groups in the extended party network is the identification of candidates for office who (1) have strong electoral prospects, and (2) will deliver on the shared party agenda. Bawn et al. (2012) highlight that the parties cannot simply commit resources to candidates in the hopes of convincing them to adhere to a party platform, since there is a principal-agent problem in which the party’s constituent groups cannot effectively monitor legislators. This is why the party network needs to focus its energies on bolstering the prospects of candidates who would enter office with a priori credible and agreeable policy stances (Cohen et al 2008). From this characterization of extended party network activity, we deduce that candidates who are targeted by the party network exhibit a previously unmeasured form of candidate quality – credible policy coherence with a salient party agenda.

Through the support of several like-minded organizations, the extended party network sends a strong signal that a candidate in a nomination offers a credibly preferable policy stance relative to other candidates. This is an aspect of candidate quality – offering stances on major policy issues that are credible and preferable to the extended party network – that would significantly bolster a candidate’s chances of success and induce extended party network support. Of course, we are not arguing that extended party network approval is all that drives electoral outcomes – many voters will directly evaluate candidates and make their own decisions.
However, as Bawn et al (2012, p.57) note, “Some voters who care nothing about the interests of the various groups are nonetheless attracted to their parties because of the ‘values,’ such as social order or equality, that they perceive in their program.” This represents the mechanism that underlies our expectation that extended party network support will predict the success of candidates, above and beyond the effects of campaign spending. That is, extended party network support indicates that a candidate offers credible policy stances that are preferable, relative to the other candidates’ positions, to a community of interests within the extended party network and will “give offense to no one [in the party]” (Cohen et al 2008, p. 83). This dynamic is especially strong for nominations because voters do not have the cue of the party label to help them select candidates.

**Design and Methodology**

In the empirical analysis, we consider the consequences of candidates’ campaign finance network positions for outcomes in primary elections. The analysis is based in the assumption that the function of extended party networks, in which coalitions of interests back preferred candidates and shape electoral outcomes, can be recognized in contribution data. One study demonstrates that campaign contribution networks could be used to classify candidates as those who were well supported by an identifiable coalition (i.e., community) of PACs, and those who were not (Desmarais, et al 2015). This study found that PAC community backing predicted electoral success in US House elections among challengers--an effect that went beyond the influence of total campaign contributions to candidates.

**Campaign Contribution Networks**

The networks we study are constructed as election-cycle-specific weighted networks connecting contributors and candidates. There is a tie between each contributor and candidate
with a weight equal to the total amount contributed by the contributor to the candidate before the primary election. We thin the network to exclude extreme cases of contributors and candidates who cannot be classified into a coherent community – candidates who receive contributions from fewer than two contributors, and contributors that give to only one candidate.

We utilized Federal Election Commission (FEC) disclosure reports and Open Secrets PAC contributions data to construct these primary election donor networks. The networks consist of three types of data. First, FEC individual contribution files detail each donation from an individual to a federal committee during each election period between 1980 and 2014.¹ These records were subset to include only contributions to candidate campaign committees, thereby excluding individual contributions to PACs. Second, all transactions or independent expenditures made by federal committees – PACs, Super PACs, and candidate or party committees – were collected from FEC records (for elections between 1980 and 1990) and Open Secrets files (for elections between 1992 and 2014). The Open Secrets data, which goes back to 1992, is generally considered cleaner and has more detailed information about PAC types and was thus utilized when possible. Third, data on candidate committees – the receiving nodes in the network – came from the FEC’s candidate master files. These files include information on the candidate associated with the committee, including name, party, incumbency status, and district.

Each of these files contains a contribution date, which was compared with state primary election dates to classify the transfer as either a primary or general election donation. The monthly distribution of primaries is given in Appendix A. Determining whether a particular contribution is intended for the primary or general election is an inherently challenging effort, as

¹ From 1980 to 1988, all individuals who gave $500 or more during the reporting period were included in the FEC data. From 1990 to 2014, this threshold was lowered to $200.
contributors are not required to state (and may not even know) which election they intend their
donation to go towards. The FEC provides an indicator (primary, general) based on the month in
which the report was filed, but these data are incomplete and likely inaccurate for reports filed
during the month of the primary election. For this reason, we defined a primary contribution as
any contribution made before the date of the recipient candidate’s primary; all contributions on
or after this date were considered general election contributions and were excluded from analysis.
Though inexact, this threshold improves upon the FEC indicator and represents the most precise
estimate possible given data limitations. Additionally, we acknowledge that in non-competitive
primaries many early contributions are intended for use in the general election. We take this into
consideration in key parts of the analysis when we restrict our evaluation to primary elections
with some degree of competition.

We assumed that money raised in potentially competitive primaries would be a clearer
indication of a donation intended for the primary. Therefore, each primary race was also
classified as either competitive or non-competitive, with contests in which *a candidate wins by
20 percentage points or less coded as competitive* and all others as non-competitive. This
standard has been employed by other scholars (Goodliffe and Magleby, 2001) and, though
generous, results in an average of only one in five races classified as competitive and a
maximum of approximately 42% competitive in 1992. The election results used to create this
indicator come from a master file of primary election returns compiled by election scholars.²

² The primary election outcome data came from two different datasets, one compiled by Vincent
Moscardelli of University of Connecticut, and the other from James Snyder of Harvard
University.
In Figure 1 we present descriptive data depicting trends that cover the time period under study. One pattern we see is that starting in the 1990s individual contributions have outpaced PAC giving, in terms of both average contributions per candidate (first plot) and overall individual contributions (second plot). However, we also see that, after adjusting for inflation, average contributions per PAC and per individual contributor (third plot) have changed little over the time period under study. This indicates that the main pattern driving the upward trends in individual giving has been an increase in the number of individuals giving during the primary period of the campaign. We observe equivalent trends in only competitive races (see Appendix B).

Community Detection in Contribution Networks

Community detection is a methodology in network analysis that is well-suited to our measurement needs, as they approximate the theoretical expectations of an extended party network. Using this approach we can identify communities that include sets of interests that have very similar contribution patterns, as well as the sets of candidates they support. In community detection, generally speaking, the communities in which actors are located are considered to be latent variables, which are identified through the analysis of network structure (Newman 2006).

We adopt a soft-clustering approach, meaning that each candidate and contributor is associated, to a varying degree, with each community (Imai and Tingley 2012). Community detection is conducted by inferring the parameters in a probabilistic model of contributions. Each contributor in a community selects its contribution to a candidate from a Poisson distribution that characterizes the support offered by the community to the respective candidate. With $k$ communities and $m$ contributors, this involves inferring $kXm$ Poisson rate parameters. In each
election cycle, we compare a range of values for the number of communities \((k)\). The amount contributed to a candidate by a PAC is modeled by a probabilistic mixture of the Poisson distributions associated with the \(k\) communities, where each Poisson distribution is weighted according to the probability that the contributor is a member of the community. Each contributor has a non-zero probability of being in each community. For the purpose of analysis using community structure, each contributor is associated with the community to which it has the highest probability belonging, and each candidate is associated with the community with which his or her highest rate (i.e., mean contribution) parameter is associated. In each election cycle, we compare models with \(k\) up to 40, using an algorithm that iteratively excludes low probability communities, and use minimum BIC as our selection criterion.

*Community Structure Overview*

We begin our analysis by addressing the first part of our question. Do we observe subgroups of elites converging systematically on selected candidates for the party nomination? The short answer is yes. Moreover, it is surprising that the core communities that converge on partisan candidates exhibit a degree of bipartisanship in their contribution strategies. In Figure 2 we illustrate the communities we identify in four election cycles, as examples from our data analysis over time. Candidates are depicted as small light blue circles. Individual contributor heavy communities (i.e., those in which a majority of contributors are individuals) are depicted as blue squares. PAC heavy communities are depicted as black circles.

These visualizations highlight the most striking and consistent pattern that emerges from our community detection analysis (we show only four cycles although we have done the analysis for each cycle, 1980-2014). First, the core of the network is characterized by one or two communities in which: (1) a majority of the contributors are PACs, and (2) a plurality of the
primary candidates are located. This pattern is true in each election cycle across time. The partisanship of these large PAC communities varies based on whether there is just one large PAC community (such as 1996, 2010, and 2014), in which case the community is fairly bipartisan, or two large PAC communities (such as 1986), in which case each is more (but not perfectly) partisan than when just one large PAC community exists. Importantly, there are no election cycles in which one of these communities includes only candidates from a single party. A second trend that we see from these network plots regards individual contributors. The pattern of individual contributor heavy communities (blue squares) suggests an increase in the number and dispersion of such communities. In other words, we observe a proliferation of partisan donor communities outside the core bipartisan PAC-heavy communities.

[INSERT FIGURE 2 ABOUT HERE]

To be sure, the PACs within these communities are not all the same. We should point out that not all the PACs are bipartisan – some tend to give money only to candidates in one party. However, these partisan PACs appear integrated with a larger group of bipartisan PACs that tend to give to similar candidates. Relatedly, the types of PACs in these communities differ. In Appendix C we provide a thorough overview of community composition illustrating differences within clusters and across time. We do not present the results here, but find that business PACs are much more bipartisan than any other PAC types and certainly more bipartisan than communities dominated by individual donors. Additionally, non-business PACs and individual donors have become increasingly partisan over time.

To illustrate that PACs (of which 73% are business PACs on average over these cycles) are consistently bipartisan in their primary giving patterns over the time period, we examine how they allocate their funds between party candidates. Figure 3 illustrates the bipartisan pattern by
showing the cumulative percentage of contributions at a given level of contributor partisanship. Contributor partisanship—the percent of funds given to the contributor’s favored party—is on the x-axis. Cumulative contributions—the percent of contributions given by contributors at or below the respective level of contributor partisanship—is on the y-axis. So, for example, in the 1980 elections half of all PAC contributions were made by groups that gave, at most, 75% of their contributions to their preferred party and at least 25% to their less preferred party. Only about 15% of PAC contributions came from groups giving to candidates from only one party.

[INSERT FIGURE 3 ABOUT HERE]

Individuals, on the other hand, are highly partisan— in 1980, approximately 70% of individual contributions were given by donors who contributed only to candidates from one party. Observing trends over time, we note that PAC giving appears consistently bipartisan, when compared with individuals. Individuals, on the other hand, are far more partisan in their giving throughout the time period. Additionally, over the historical period individual donors increasingly contribute a larger percentage of all candidate funds, so that overall contributions (the “All” line) become more partisan over time. Thus, we argue below that contributions have become more partisan over time due to the increase in influence of individual donors and, as we show below, the fragmentation of these donors into smaller, more partisan communities.

Of course, as we previously mentioned, different PAC types exhibit different levels of partisanship, with business PACs being the least partisan and labor and ideological PACs the most partisan. However, throughout the time period we study, the partisanship exhibited by individuals is greater than or equal to the partisanship of the most partisan PAC types. The large, PAC-dominated communities we identify in Figure 2 represent the core of campaign contribution networks in each year—forming bridges between candidates, parties, and other
communities. For the sake of simplicity we do not separate different types of PACs in Figures 2 or 3, but refer you to the analysis is Appendix D to observe differences across PACs related to business, labor, ideological/issue groups, and party committees. That analysis emphasizes that the central actors contributing largely bipartisan donations in primaries are business PACs.

Despite the consistent centrality of one or two large PAC communities, we do see changing dynamics in contribution network community structure over the election cycle. This trend is apparent in both Figures 2 and 4. In Figure 2, we see that 2010 and 2014 are characterized by a larger number of more individual contributor dominated communities, which are dispersed around the PAC dominated community. In Figure 4, we see that the percentage of candidates incorporated into the large PAC communities has dropped considerably over the time period we study, from around 80% in the 1980s to closer to 30% in recent elections. As a speculative aside, which we do not test in the current manuscript, the shift in primary contributions from relatively bipartisan and PAC-centric support coalitions to more partisan individual coalitions could be, in part, driving polarization in the candidates who run for Congress.

In the analysis that follows we take membership in a large (100 or more candidates) PAC dominated community as the indicator of EPN support for a candidate. The large PAC-dominated communities represent the dense core of the EPNs, while the smaller and more fragmented individual contributor communities represent support for candidates outside of the core party networks. We expect that candidate integration into this EPN core will be associated with increased vote shares.
Primary Vote Share: Effects of Network Core Support

The extended party network is a broad coalition of interests that arises in an asynchronous and distributed manner to select and elect candidates who are appealing to the broad coalition. Above we describe how we use campaign contribution networks to measure the EPN. In this section we evaluate our second question asking whether partisan elites make an impact on the prospects of candidates for the party nomination. Specifically we test whether a candidate’s inclusion in the EPN, as we define it, improves their electoral performance. Looking again to Figure 4, we see that candidates included in large PAC communities exhibit relatively high vote shares---60%-70% on average---and their average vote share has been rising in recent years. We measure the electoral outcome for each candidate as the proportion of the vote received in the primary election. Of course, this is a purely bivariate relationship and does not control or adjust for any other differences between candidates who are and are not in large PAC communities. Further analysis is required to account for potential confounders of contribution network positions.

We use coarsened exact matching (CEM) (Iacus et al. 2012) to control for confounding factors in identifying the effects of EPN support. Unlike with general election candidates, we have little background data on all of the candidates who run in primaries. As such, we cannot match on all of the variables controlled for in a study of general elections (Desmarais et al. 2015). We do, however, have many more candidates in our data since (1) there are often more than two candidates running in a primary, and (2) our data covers a longer time span. This allows us to match candidates on the specific primary race in which they are running, meaning we only compare candidates who are running for the same seat, in the same party, and the same election cycle. We then coarsen total contributions into election-cycle-specific strata, and match on strata.
We started at five strata, and added strata until there was no statistically significant difference (at the 0.10 level according to a t-test) between contributions in the treatment (i.e., receiving EPN support) and control groups in any of the subsets we consider. We end up with twelve contribution strata, which we re-define for each election cycle (i.e., we re-calculate the strata bounds for each election-cycle-specific contribution distribution).

Our matching results, estimated as average treatment effects on vote share of being included in the large PAC communities, are presented in Table 1. Depending upon the subset of candidates we consider, the estimates vary between an average treatment effect of 5—10% in terms of percentage vote for the candidate in the primary. We present two sets of standard errors, with the nonparametric bootstrap standard errors being the more conservative set. The estimates in bold are statistically significant using the nonparametric bootstrap. We find statistically significant effects (at the 0.05 level, two-tailed) in all but the subsets limited to candidates in the 1980s and 1990s, respectively, though estimates are positive and comparable in magnitude in all subsets. Competitive races are defined endogenously, as those in which the top two candidates were within 20% of each other. Overall, we find that candidate inclusion in the EPN, as defined by support by a large community of PACs, results in a substantively significant improvement in vote share, controlling for the race in which the candidate is running and the level of contributions. These results imply that the EPN behaves as we expect a formal party organization to behave: it vets candidates and helps them advance favorably in the nomination process, even controlling for the amount of spending in the race. As the number of candidates integrated into PAC-driven contributor communities decreases (as we observe in the data), the
emerging trend is characterized by candidates who receive support primarily from highly ideological individual donors.

Discussion

The theory of parties as extended networks suggests that groups and elite individuals affiliated with one of the major political parties will work to nominate like-minded candidates who, if elected, enact policy supported by this coalition. To date, however, there has been little systematic analysis of the potential gatekeeping role played by members of the EPN in congressional primaries. We address this limitation by documenting and analyzing communities of primary election donors from 1980-2014 in competitive open seat and challenger contests.

Our findings fit well with EPN theory, while exposing contrasting dynamics between PAC and individual donations in the party networks. We note that primary PAC giving is largely bipartisan. This is consistent with access theories of mostly business-oriented interest groups that make up the vast majority of the PAC population. Strikingly, however, the electoral participation of bipartisan groups in partisan nominations has not been characteristic of either theoretical or empirical accounts of extended party networks (see Grossman and Dominguez 2009). The largest community of donors in every cycle is dominated by PACs that give a non-trivial proportion to candidates from both parties, and candidates within these communities are substantively more likely to win the nominating contest, controlling for both candidate spending and the contest in which the candidate is competing (controlling for party, election cycle, district and constituency characteristics, and anything else that does not vary across candidates within primary contests). In short, the support of PAC networks, which are less partisan than individual contributor networks, translates into electoral success.
As we expected, individual giving on the other hand is overwhelmingly partisan, with 70 to 80% of individual donors who give to more than one candidate giving to only a single party. These donation patterns were consistent throughout the period investigated. What did change over time, however, is the overall composition of the donor network and the aggregate amount contributed by PACs and individuals. Starting in 1988, the proportion of PAC community backed candidates declined substantially. In the 1980s and early 1990s a majority of candidates were integrated into a dense, central PAC donor community, but by the early 2000s a majority of candidates were part of smaller, less centralized donor communities dominated by individual contributors. The amount contributed by individuals also increased substantially starting after 1992, whereas in the 1980s PAC and individual giving in primaries was fairly equal. By the 1990s individual giving was twice that of PACs and by the 2000s the ratio was roughly 4:1.

The impact of these trends has been to make candidates less reliant on bipartisan support to compete in a primary. While integration in the central donor community is still positively related to vote share, a majority of candidates are not in this community. Rather, these candidates can rely on communities of individual donors – who we know are more ideologically extreme than most PACs – to fund their campaigns. In short, more ideological candidates are able to enter races without being screened by the potentially moderating forces of fairly bipartisan PACs, and these candidates are increasingly able to garner the resources necessary to wage a competitive primary fight. Even if these highly ideological candidates do not win, they have the capacity to affect the position-taking of more moderate candidates who will be pulled toward the extremes by the dynamics of the primary contest. As the funding environment changes, moderate candidates may believe they lack the requisite ideological credentials to win over partisan financiers in primaries and self-select out of competition (Thomsen 2014). To the degree that
primary financing has contributed to polarization, the massive increase in individual donors and the subsequent splintering of previously dominant bipartisan PAC communities seems a potential cause. Barber (2016) demonstrates a similar dynamic in state legislative elections: campaign finance laws that privilege individual donors over PACs tend to yield more ideologically extreme legislators.

Our findings tentatively raise thorny questions about the aims of campaign finance reform. Traditionally, the goal of reform is to reduce the appearance or actuality of political corruption with a primary focus on business interests. This aim, however, appears to conflict with emergent concerns about partisan polarization of the party system. If business interests play a moderating role on partisanship through bipartisan giving (which our findings over time suggest but do not demonstrate conclusively) then their diminishing position relative to partisan donors might be a cause of concern if polarization makes governing inherently more difficult and less representative. In a separate analysis (Appendix E) we also find that a substantial number of individual contributors are included in the more bipartisan PAC-driven communities, and that these contributors are no different in terms of partisanship or ideology from individuals outside these bipartisan PAC communities. This implies a possible mediating role for majority-PAC communities. In other words, bipartisan PACs might assume a leadership role within the EPN in encouraging ideological donors to support candidates who might be more moderate than such donors would otherwise contribute to, based on ideological preferences (but see Bonica 2016).

Future research should consider whether these individuals have formal connections to the PACs in these communities, and whether these links moderate individuals’ partisan behavior. The paradox is that political reform efforts to cut back on corruption could mean curtailing business engagement relative to other kinds of donors. This could make the sources of candidate
support more fragmented and partisan. Lacking robust and bipartisan business PAC support suggests that candidates are increasingly reliant on highly ideological donors for the party nomination. This might, in turn, advantage more ideological candidates that such donors prefer over the more moderate candidates favored by bipartisan business PACs.
REFERENCES


Brady, David W., Hahrie Han, and Jeremy C. Pope. 2007. “Primary Elections and Candidate Ideology: Out of Step with the Primary Electorate?” Legislative Studies Quarterly, 32:1 (February): 79-105.


Hall, Andrew B., and James M. Snyder. 2015. “How Much of the Incumbency Advantage is Due to Scare-Off?” Political Science Research and Methods 3:3 (September): 493-514.


The Effect of Core Network Support on Primary Vote Share (1980–2014)

<table>
<thead>
<tr>
<th></th>
<th>Estimate</th>
<th>Matched N</th>
<th>Original N</th>
<th>AI--SE</th>
<th>Boot--SE</th>
<th>Balance</th>
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<tbody>
<tr>
<td>All Races</td>
<td>0.0937</td>
<td>337</td>
<td>11,429</td>
<td>0.001</td>
<td>0.0265</td>
<td>0.4081</td>
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<td>Competitive Races</td>
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<td>192</td>
<td>3,277</td>
<td>0.001</td>
<td>0.0147</td>
<td>0.2914</td>
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<td>1980s</td>
<td>0.1046</td>
<td>70</td>
<td>2,297</td>
<td>0.0025</td>
<td>0.0587</td>
<td>0.7916</td>
</tr>
<tr>
<td>1990s</td>
<td>0.0589</td>
<td>146</td>
<td>3,438</td>
<td>0.0015</td>
<td>0.0338</td>
<td>0.6522</td>
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<tr>
<td>2000+</td>
<td><strong>0.1293</strong></td>
<td>121</td>
<td>5,694</td>
<td>0.0019</td>
<td>0.0454</td>
<td>0.2286</td>
</tr>
<tr>
<td>Open Races</td>
<td>0.0546</td>
<td>252</td>
<td>6,058</td>
<td>0.001</td>
<td>0.0212</td>
<td>0.8518</td>
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</table>

**Table 1.** Estimates are average treatment effects of core network support on proportion vote share in the primary. Effects are estimated on samples of observations that are exactly matched on primary competition and contribution stratum (with twelve strata). AI-SEs are the Abaide-Imbens standard errors, and are estimated using the R-package Matching. Boot-SEs are derived by re-calculating the estimates on 1,000 nonparametric bootstrap samples from the full dataset. Balance estimates are p-values from t-tests comparing treatment and control candidates' contributions after matching. Estimates in bold are statistically significant at the 0.05 level (two-tailed), based on the Boot-SEs.
Figure 1. Political Contributions in Primary Elections. All dollar amounts are given in 2014 inflation-adjusted dollars.
Figure 2. Contribution Networks Connecting Communities to Candidates. Candidates are depicted as small light blue circles. Individual contributor heavy communities (i.e., those in which a majority of contributors are individuals) are depicted as blue squares. PAC heavy communities are depicted as black circles. An edge is drawn between a community and a candidate if any contributor in the respective community contributed to the candidate's campaign. Darkness of the edge is proportional to the average contribution by a contributor in the community to the candidate. Each community is sized in proportion to the square root of the number of candidates in the community. Vertices are placed using the Fruchterman and Reingold (1991) algorithm.
Figure 3. Partisan Favor by Primary Contributors. Party balance by frequent early contributors (defined as those who give to two or more candidates). Each contributor is characterized by the maximum percent of contributions given to candidates of one party. Each curve depicts the percent of total contributions (on the y-axis) given by contributors with party balance less than or equal to the percentage on the x-axis.
Figure 4. Trends in Majority PAC Community Support. PAC Communities are those in which a majority of the contributors are PACs.
Appendix A: Timing of Primary Elections

**Figure A1.** Monthly distribution of primary dates throughout our dataset.
Appendix B: Campaign Contributions in Competitive Races

Figure A2. Descriptive trend plots for competitive races. All dollar amounts are given in 2014 inflation-adjusted dollars. We define competitive race as one in which a candidate wins by 20 percentage points or less.

The campaign finance trends observed in all races hold when restricting to only competitive races. In particular, overall and average contributions by individuals have significantly outpaced PAC contributions, although average per-PAC and per-individual contributions have changed very little.
Appendix C: Community Composition

It is important to note that, despite the broad trends outlined, the majority PAC communities identified in a given year differ in key ways. The most noticeable difference is between PAC communities dominated by business PACs and communities where business groups are a minority compared to ideological, labor, and/or party PACs.

This difference can be seen in Figure A4, which displays a breakdown of the type of PACs in each community for a handful of years. Starred labels on the x-axis show that the majority of community members are PACs, with all other communities containing a majority of individual donors. Several trends emerge from this breakdown. First, consistent with the findings presented in Figure 2, the total number of communities increases significantly over time due to a larger number of small communities. These smaller communities often – though never exclusively – contain majorities composed of individual donors.

Second, in every year surveyed the largest PAC community is composed predominantly of business PACs, with a relatively small proportion of other PAC types. The size (in number of PACs) of this largest community has grown steadily over time, from 112 PACs in 1980 to 610 in 2014. Often there is a second or third slightly smaller PAC community that is also dominated by business PACs. In short, business PACs are by far the largest category, outpacing all other types. Thus, the findings presented in Figure 4 - which suggest that majority PAC communities are more bipartisan in their contribution patterns than individuals – are likely due to the predominance of business PACs in majority PAC communities. Indeed, when business PACs are separated out, other types of PACs contribute in a far more partisan manner (see Figure A3). And,
Figure A4. Breakdown of Communities. Total number of each type of PAC, by community, with majority PAC communities starred along x-axis.
importantly, Figure A5 shows that business PACs are more active in non-competitive primary races, consistent with the idea that business PACs are seeking access to government rather than ideological outcomes.

At the same time, however, most cycles have a number of smaller PAC communities – similar in size to many of the individual donor communities – that contain more ideological, labor, and/or party PACs. These non-business PACs become more prominent in smaller PAC communities over time. For example, in 2014, community 15 is composed almost entirely of business PACs, while communities 6 and 13 are composed mainly of ideological PACs. Thus, over time, PACs that are less bipartisan in their giving are grouped in their own communities, representing a fragmentation of PACs – alongside a fragmentation of individuals – within the donor network.

![Figure A5. Business PAC Giving by Race Type. Shows percentage of all PAC funds given by business PACs in competitive versus non-competitive primary races. Remaining contributions came from ideological, labor, or party PACs.](image)
Finally, examining the top donors in each PAC community reveals that traditional business PACs are grouped together in the largest one or two PAC communities – and thus donate in similar ways – while more ideological groups are spread out across a larger number of communities. Table A1 lists the top five PAC donors, their PAC types, and the total amount they gave, by community, for the 2014 network. The largest PAC community (number 15) contains three business PACs (Honeywell International, the United Parcel Service, and the National Beer Wholesalers Association), one labor PAC (the International Brotherhood of Electrical Workers), and the Democratic Congressional Campaign Committee. The second and third PAC communities (6 and 13) are composed entirely of liberal and conservative ideological PACs, respectively.

In sum, there appears to be a qualitative difference between PAC communities dominated by more traditional, moderate business interests and PAC communities populated by a wider range of organizational types, especially ideologically similar groups. It is quite plausible that, as campaign financiers have fragmented into smaller communities no longer dominated by moderate business interests, more ideologically extreme PACs have gained greater influence, suggesting that primary campaign financing may play a role in increased political polarization.
<table>
<thead>
<tr>
<th>Community</th>
<th>Majority PAC?</th>
<th>PAC</th>
<th>Type</th>
<th>Amount</th>
<th>PAC</th>
<th>Type</th>
<th>Amount</th>
<th>PAC</th>
<th>Type</th>
<th>Amount</th>
<th>PAC</th>
<th>Type</th>
<th>Amount</th>
<th>PAC</th>
<th>Type</th>
<th>Amount</th>
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<tbody>
<tr>
<td>No</td>
<td>Women Vote!</td>
<td>Ideological</td>
<td>$64,046</td>
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<td>Ballard Corp</td>
<td>Business</td>
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<td>Alexander &amp; Baldwin</td>
<td>Business</td>
<td>$15,970</td>
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<td>No</td>
<td>West Virginia for Life</td>
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<td>$25,894</td>
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<td>Republican Jewish Coalition</td>
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<td>House Conservatives Fund</td>
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<td>$30,824</td>
<td>Liberty &amp; Prosperity PAC</td>
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<td>$28,478</td>
<td>Society of Interventional Radiology</td>
<td>Business</td>
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<td>UnitedHealth Services</td>
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<td>Ideological</td>
<td>$15,217</td>
<td></td>
</tr>
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</table>
Appendix D: Partisanship of Different PAC Types and Individual Contributors

Business PACs, by far, represent the most bipartisan contributors throughout the time period investigated. Labor, ideological, and party PACs contribute in a much more partisan manner, and increasingly so in recent years. In fact, their behavior more closely mirrors that of individuals rather than business PACs, suggesting that more numerous and active partisan PACs

Figure A3. Partisan Favor by Primary Contributors. Party balance by frequent early contributors (defined as those who give to two or more candidates). Each contributor is characterized by the maximum percent of contributions given to candidates of one party. Each curve depicts the percent of total contributions (on the y-axis) given by contributors with party balance less than or equal to the percentage on the x-axis.
could, along with increased individual activism, explain some of the increased partisan polarization since the 1980s.
Appendix E: Individual Donor Ideology and Partisanship

For individual contributors in 2014, we matched donor records to Catalist data in order to compare key characteristics of individuals connected to majority-PAC communities with those individuals in majority-individual communities. We obtained a relatively high match rate of 82.5%. Figure A6 compares the ideological and partisan distributions of individuals in each type of community. These variables are based on Catalist models that predict an individual’s propensity to identify with a particular ideology and party. Catalist has validated these models by comparing their predicted values to individuals’ self-reported survey responses when available.

Neither distribution shows much difference between individuals in majority PAC communities and those in majority individual communities. To test whether either difference is statistically significant we ran a Wilcoxon signed rank test, which assesses whether two distributions differ without making any assumptions about the nature of the distributions themselves. The results of these tests show that, for both ideology and partisanship, the community distributions are not statistically different at conventional levels (p < 0.1). Thus the ideological and partisan composition of individuals in PAC-dominated communities is quite similar to that of donors in individual-dominated communities, despite differences in the way in which these individuals allocate their contributions. We hypothesize (but do not test) that individuals in PAC communities contribute in a more bipartisan manner due to their relationship – either formal or informal – with more moderate PACs.
Figure A6. Individual Ideology and Partisanship by Community Type. Shows the distribution of ideology and partisanship for individuals in majority PAC communities and those in majority individual communities.