Political Geography, Campaign Contributions, and Representation

Jenna Bednar
Elisabeth R. Gerber

University of Michigan

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Abstract: Legislative district boundaries constrain electoral choices; citizens may be unable to vote in an election that matters to them. In this paper we examine a spatially unconstrained form of participation to see what it reveals about a citizen's representational preferences. We hypothesize that citizens' contributions will be a function of the political and economic geography of their metropolitan region: citizens living in more interconnected regions will be more likely to donate to candidates in neighboring districts than those who live in less connected regions. To test this hypothesis, we geolocate all campaign contributions to U.S. Congressional candidates made by individual donors in the 2007-08 election cycle, identifying contributors by their congressional district, their MSA, and the recipient's district. We use several measures to characterize the interconnectedness of the MSA. Our results suggest that citizens' representational preferences remain tied to location, but with spatial boundaries that extend beyond the home district.

Introduction

From Pitkin (1967) to Mayhew (1974) to Fenno (1978), the dominant modern theory of representation in the American political system remains premised on a dyadic relationship between the voter and her representative. Recent empirical work continues this tradition, seeking to establish the extent of congruence between what a legislator does and what her constituents want, and the conditions that lead to more or less congruence (e.g., Quaile Hill and Hurley 1999, Hurley and Quaile Hill 2003, Bailey and Brady 1998, Adams et al. 2004, Gerber and Lewis 2004, Wlezien 2004, Griffin and Newman 2005).

Despite the continued dominance of the dyadic theory, some scholars have proposed alternative conceptions of representation based on systemic considerations (e.g., Weissberg 1978, Mansbridge 2003). One of the systemic alternatives is characterized by Mansbridge as *surrogacy*: when a political official represents someone outside of her district. Mansbridge offers as examples instances of identity representation, such as Barney Frank, the Massachusetts representative, acting as the de facto representative for the nation's gay population. Another instance of surrogacy is issue- or interest-based representation, when one representative takes the lead on writing anti-war or pro-choice legislation, for example, which targets a concern of a population scattered nationwide. Surrogacy may also be implied when citizens care about overall party representation in Congress (Gimpel, Lee, Pearson-Merkowitz 2008). When surrogacy is based on broad national issue or interest categories, it may be likened to institutionally-based theories of representation (Jackson and King 1989), where a citizen wants to maximize the influence over her issue in the legislature.

In this paper we introduce an alternative to both the district-based dyadic theory of representation and the institutional- or systemic-based theory. We suggest a middle path, where citizens seek representation at a spatially-defined, regional level. We examine a form of political participation, individual campaign contributions, that allows citizens more freedom of choice than voting in where to deploy political resources; our results indicate that citizens care about and seek to influence the outcomes of elections in surrounding districts. This regional interest grows as the citizen's relationship with other districts intensifies due to regional integration. Our results suggest that a citizen's sense of her "representative" may not fit neatly into the one-to-one correspondence implied by dyadic representational theory, but is more fine-grained than the institutional/systemic thesis that divorces representation from location. In our model, location continues to matter. We posit that a citizen's representational preferences may not derive solely from political boundaries, but instead are also based on regional economic, social and political interests.

The Disconnect Between Political Geography and Political Interests

The most commonly studied form of political participation in modern American political science is voting. Conventionally, participation is likened to a ladder: voting is at the bottom rung, while other forms of political activity, such as placing yard signs, campaigning, registering voters and contributing financially to campaigns, are often explained by the same predictors, but with an assumption that augmented intensity of political preferences or possession of greater social or financial resources moves the citizen up the ladder of participation (e.g., Verba and Nie, 1987;

Rosenstone and Hanson 1993; Brady, Verba, and Schlozman 1995).[1] Citizens are defined politically as constituents within political districts that are assigned based on their residential address. The electoral system is based upon the citizen's position in geographic space: the address of his/her house. However, the dominant theories of why people participate in politics focus primarily on individual characteristics of the citizen - education, financial resources, age, religion, information, etc. Precious few of these explanations consider the person's location in space, and how that location may affect the individual's participation decisions.[2]

While voting may be the most common (and most commonly studied) form of political participation, it is also highly unusual in the sense that the electoral process places significant constraints on this behavior. Apportionment of citizens into legislative districts fragments political space, imposing artificial and to some extent arbitrary boundaries that limit citizens' political choices. Geographic districts delineate the set of citizens to whom a representative is electorally accountable. Yet a citizen's interests are not necessarily limited to the activities, policies and politics that take place within her own district boundaries. We contend that political boundaries – particularly legislative districts that are drawn to achieve legal mandates such as contiguity or compactness, or political goals such as partisan or incumbency advantage (Cain 1984) – may often not map onto a citizen's need for representation or her desire to express a political preference. The legislative district is a created space that may change with each

[1] Brady, Verba, and Schlozman (1995) break up the conventional SES model of participation into time, money, and social skill, or network; some citizens have more money than time, and therefore are more likely to write a check than participate in more time-consuming ways.

[2] A seminal exception is Huckfeldt and Sprague (1987) who chart the influence of social context on political behavior; social context is strongly correlated with location. Recently interest has bloomed in understanding the effects of spatial context on political participation. Cho and Nicley (2008) demonstrate the effect of state boundaries in creating political identity and shaping voting decisions. Others focus on the social motivations of participation and choice; see, e.g., Zuckerman, Valentino, and Zuckerman 1994, Großer and Schram 2006, and Nickerson 2008.

apportionment, and sometimes even more frequently. Motivations for political action defy such boundaries and come from other spatial contexts. A citizen in one district may feel that a legislator from a different district better represents her interests, but her residential address makes her ineligible to vote for that candidate. From a voter's perspective, geographic apportionment limits her electoral choices. It means that a voter can only vote for a subset of legislators whose actions will affect her well-being.

Other forms of participation expand the set of political choices. One such form of behavior is contributing to political campaigns. Potential donors are tied to a particular geography (i.e., street address) but are unlimited in the choice of candidate(s) to support (subject to candidate- and election-cycle-specific dollar limits). A donor can contribute to a candidate running in her home district, a different district, or both; she can contribute to multiple candidates in a given race; to different candidates running in multiple races; and at multiple times over the course of an election cycle. The records of this contribution behavior are readily available from the FEC campaign disclosure reports filed by congressional (and presidential) candidates of all contributions over $200. Therefore, campaign contributions offer a unique opportunity to observe political participation and the relationships between citizens and political officials.

We study whether the pattern of individual campaign contributions reflects to interests that spill across congressional boundaries but remain associated with local space. If so, it reveals that campaign contributions are a means to address the mismatch between political boundaries and individuals' political and policy interests; contributions may offset some of the artificial fragmentation created by legislative apportionment. If they do not, it suggests that donors are

motivated by considerations other than affecting election outcomes and policies that affect them.[3]

We focus on a conception of space that is defined by behavior rather than politics: U.S. metropolitan areas. Metropolitan areas are defined as regions surrounding a central city or cities with high population density and strong social and economic ties. A great deal of economic activity in the U.S. takes place on a metropolitan scale (Brookings 2009). People are tied in myriad ways to the people, places, businesses, and politicians throughout their metropolitan region; these linkages help to define an individual's political interests. In larger metropolitan regions, this space generally crosses several congressional district boundaries. We hypothesize that metropolitan area-level context will have an important impact on an individual's contribution decisions.

In addition, many public policies are explicitly or implicitly metropolitan in scope. For example, the major U.S. surface transportation programs require planning and funding to take place at the metropolitan level (Gerber and Gibson 2009). Many housing, environmental, emergency preparedness, and other policies are also metropolitan in scale (NARC 2002). These programs create policy linkages within metro areas; we hypothesize that donors will recognize these linkages and direct their contributions to candidates across their metro area.

We believe that by shifting attention away from strictly individual-level factors, and acknowledging the potential importance of regional context on individual participation decisions,

[3] Recent studies by Ansolabehere et al. (2003) and Gordon et al. (2007) consider the possibility that individual campaign contributions should be viewed as "consumption" rather than as "investments," with Ansolabehere et al. concluding "yes" and Gordon et al. concluding "no." Consistent with Gordon et al., we provide evidence that donors respond to the interconnectedness of their economic regions and target contributions in ways that are consistent with advancing their economic self-interest.

this study has the potential to dramatically change the way we think about and study representation and political participation in an interconnected political system.

Capturing the Effect of Regional Interconnectedness on Representation

We begin by describing basic geographic patterns underlying individual contributor behavior. Due to the availability of a unique dataset, we focus on contributions to congressional candidate committees made during the 2007-08 election cycle by individual donors.[4] We first examine the proportion of in-district versus out-of-district contributions, noting the prevalence of out-of-district campaign contributions. In the 2007-08 election cycle, 62% of the contributions made and 64% of the dollars contributed by individuals to any congressional candidate were made to candidates outside of the donor's district.[5] The average candidate received 59% of contributions and 61% of dollars raised from out-of-district contributors. In the 2007-2008 electoral cycle, 93 congressional candidates reported that they raised *no money at all* from within their own district. Given that the majority of donations are sent outside of a donor's district, and a majority of contributions are received from donors outside of a candidate's district, one should not infer that the congressional district boundary is the strongest spatial context affecting a donor's decision.

A recent study by Gimpel, Lee, and Pearson-Merkowitz (2008) begins to explore patterns of individual out-of-district campaign contributions. Their research confirms earlier findings that individuals are more likely to donate to a campaign if the election is competitive (e.g. Snyder

[4] Specifically, the 2007-08 FEC data are available with donor addresses merged into the donor files, allowing the geographic analyses that we describe below.

[5] These percentages are calculated from the 1,178 congressional candidates in the 2007-2008 election cycle.

1990, 1993; Morton and Cameron 1992; Francia et al 2003). By further tracking donation patterns by donor zip code, they are able to trace a significant proportion of the donations to populations with high levels of wealth and education, in concordance with existing hypotheses about political participation. They infer that donors are motivated by partisan concerns for congressional control, and will donate funds to competitive districts nationwide to maximize their party's control of congressional seats. Their results are consistent with an institutional or systemic-based conception of representation (Jackson and King 1989). The results do not address the economic spatial context that might shape a contributor's decision. In the systemic model, location does not matter.

We investigate the extent that regional geography influences where donors send their checks. Specifically, we look at the interconnectedness of metropolitan regions. Economic and social interconnectedness relates to the flow of citizens between communities. The more that citizens' interests - social, cultural, or economic - are distributed across various places within a region, the more we consider that region to be interconnected. One of the most significant forms of interconnection is the economic relationship between communities, where citizens live and work in different places within the region. Other contributors to interconnection include a common natural resource (e.g., a regional park, river, lake, etc.), a regional media market, and cultural connectors such as a shared heritage. In this paper we focus on economic indicators, believing that they often coincide with social and cultural sources of common identity.

By examining contribution patterns across the geographic space of metropolitan areas, we can examine the effects of geographical spillovers on political participation. Our voting rights are restricted by residence, but political interests extend beyond the boundaries of congressional districts because the effect of policies may spill across political lines. Citizens with significant

ties - perhaps employment, perhaps educational, perhaps social or recreational - to a neighboring congressional district will care about the district's political representative. The greater these ties, the greater the likelihood of cross-district activity and hence the stronger the tendency towards regionally-based conceptions of representation. Therefore our primary hypothesis is:

Hypothesis 1: *People living in highly interconnected metropolitan areas are more likely to make out-of-district campaign contributions to candidates within their metro area than are people living in less interconnected metro areas.*

In the following sections, we describe our data and methodology for measuring and analyzing spatial patterns of campaign contributions. We then define our measures of regional interconnectedness and various controls. We present our analyses and results, and conclude with a discussion of implications.

Methodology and Data

Individual Contributions

Testing our hypothesis requires us to measure individual contributor behavior, each donor's precise geographic location, and aspects of the spatial and electoral environments. Our primary data source is the database of individual contributions to U.S. congressional candidates, available from campaign disclosure reports filed by federal campaign committees (including candidate committees, party committees, PACs, and others) with the U.S. Federal Elections Commission. The data files report each individual donor's name, occupation, filing date, contribution type, recipient committee, and amount for each contribution over $200. For all electronically filed reports, the donor's address is also available in a separate pdf file. For the 2007-08 election

cycle, the Center for Responsive Politics has combined these data sources and added each donor's address to the contribution database file. Since our analyses require us to identify each contributor's location in several spatial dimensions based on their street address, we focus on the 2007-08 election cycle for which these data are available. That file contains records for 595,566 individual contributions to congressional candidates.

The FEC/CRP data are in several ways particularly well suited for our analyses. They are comprehensive as they include every contribution over $200 received by every registered committee, as required by federal law. They are reliable in the sense that they are filed by committees, who are subject to substantial penalties for misreporting, and not by individual donors who may be vulnerable to non-reporting, recall errors, or response bias. And they contain several important pieces of information, particularly the donor's address, occupation and employer. However, the FEC data are limited in several ways as well. First, they do not include many other pieces of personal information about individual donors that would be helpful for analyzing behavior and inferring motivations such as ideology, partisanship, income/wealth, attitudes, and other forms of political behavior. We are therefore limited to modeling the effects of factors that occur or vary at the level of the neighborhood, district or metropolitan area, rather than at the individual level. And second, the address information is limited to street address and does not include other spatial information such as congressional district or metro area. Our methodology allows us to map individual donors to congressional districts and metro areas, as well as other relevant geographies, as described below.

Our interest in the potential influence of the regional context requires us to place donors precisely within congressional districts and MSAs so we might be confident that a donation remains within a donor's district or goes to a candidate in a neighboring district. Therefore we

could not simply map ZIP codes to congressional districts, as previous analyses of the FEC individual contributor data have done (generally by matching ZIP code centroids to congressional districts.[6] Since the FEC/CRP data report each donor's street address, we are able to geocode each donor's reported address using GIS and locate its x-y coordinates. Geocoding links address information to geographic coordinates contained in a reference layer. The ESRI Streetmap for North America 9.3.1 provides a current reference layer that includes all roads in the 50 states, Washington D.C. and Puerto Rico, thereby allowing us to efficiently conduct this geocoding. However, our geocoding revealed that the FEC/CRP address data is of low quality. Many addresses are partial, incorrect, or missing entirely. In our application, we matched 73% of donor addresses to an address in the Streetmap layer, using a generous 80% spelling sensitivity threshold. Of the unmatched 161,597 records, 35,600 contain only ZIP code and no street address, while 42,419 list only a P.O. Box.

We then overlay electronic boundary maps from the U.S. Census Bureau's TIGER/Line files to place each address within its corresponding congressional district and metro area (as well as other geographic units such as county, neighborhood (tract), and census block).[7] For congressional districts, we use the 2008 Congressional Districts Boundary File, which describes the relevant boundaries for the 2007-08 election cycle. For metro areas, we use the 2000 MSA and CMSA Boundary Files. An MSA (Metropolitan Statistical Area) is a geographic area that "contains a core urban area of 50,000 or more population…. Each metro [or micro] area consists

[6] For example, in the 2007-08 individual contributor file, we find that approximately 21% of ZIP codes in which contributors reside are split between multiple congressional districts. While previous analyses could reasonably assign donors within those ZIP codes to the district containing the centroid of the ZIP code area, our analyses require assignment to multiple geographies, so that approximate assignment approach would introduce an unacceptably high degree of error.

[7] We join the donor location point file with the CD and MSA/CMSA boundary files using the spatial join tool in ArcGIS 9.3.

of one or more counties and includes the counties containing the core urban area, as well as any adjacent counties that have a high degree of social and economic integration (as measured by commuting to work) with the urban core" (OMB 2003). A CMSA (Consolidated Metropolitan Statistical Area) is a larger region, also characterized by a high degree of social and economic integration, that contains two or more MSAs.[8] In 2003, the Census Bureau moved to a new metropolitan area designation – the Core Base Statistical Area or CBSA – to replace the MSA/CMSA designation. However, the commuting/journey to work data, which forms the basis of our main independent variables, is only available at the MSA/CMSA level, so we use that designation for our metro area analyses. Since we are interested in contribution flows within and between MSAs, we further limit our analysis to those 403,803 geocoded donors in our database who reside within an MSA.[9] For simplicity, when we refer to MSAs, we include both MSAs and CMSAs.

Once each donor is assigned to her CD and MSA, the next step is to identify the CD and MSA of the recipient candidate. Identifying the recipient's congressional district is easy: each contribution record includes the recipient candidate's committee code, and each congressional candidate is uniquely linked to a single CD in a given election cycle. Identifying the recipient's MSA, however, is more difficult. As discussed in the Introduction of this paper, and as illustrated in Figure 1, congressional district boundaries rarely correspond to MSA boundaries; indeed, that spatial mismatch is the primary motivation for this paper.

Figure 1 Here

[8] A CMSA may also contain micropolitan statistical areas. These are similar to MSAs but contain between 10,000 and 50,000 persons.

[9] Approximately 75% of the total US population currently lives within an MSA/CMSA (US Census 2009).

From a methodological perspective, however, the spatial mismatch between congressional districts and metro areas means that a given MSA may contain parts of several congressional districts, and a single congressional district may lie within several MSAs. Figure 2 illustrates this mismatch on a micro level: it shows the Detroit, Michigan CMSA, which contains nine counties, and the ten congressional districts that lie fully or partially within the CMSA. Our primary dependent variable – contributions to candidates in a different CD but same MSA – requires us to determine whether the recipient is in the donor's CD and MSA. For our purposes, we say that a recipient's CD is within the donor's MSA if any part of the CD lies within the MSA. Since we are interested in contributions to different CDs within the donor's MSA, we further limit our analysis to the 258 MSAs that contain parts of two or more congressional districts.

Figure 2 Here

Table 1 reports the number and amount of contributions to three types of recipients: candidates in the donor's own district (in-district or "IND"), candidates in a different district and different MSA (out-of-region/out-of-district, or "OROD"), and candidates in a different district but same MSA (in-region/out-of-district, or "IROD"). This last category is the quantity of interest for our study; it is a measure of donors' participation in other races within their region. Overall, we see that 29% of all contributions and 31% of all dollars contributed are IROD. This amount varies across MSAs from 0% of contributions in 46 districts to 79% of contributions and 77% of dollars contributed, respectively, in the Lewiston-Auburn, ME MSA. Figure 3 shows the distribution of these three types of contributions for donors living within the Detroit CMSA, while Figure 4 separately shows the distribution of IROD and OROD contributions for the entire United States.

Table 1 Here

Figure 3 Here

Figure 4 Here

MSA Interconnectedness

The next step in constructing our data set involves measuring the interconnectedness of metropolitan areas. Our theory suggests that in regions where people tend to live and work all in the same small geographic area, they will have less of a personal stake in the politics and policies of districts other than their own and so will be less likely to engage in, participate in, and contribute to the political process across their region. In regions where people regularly move about the region in their personal lives, by contrast, we expect them to perceive a greater benefit from participating in the politics of those neighboring places. This notion of interconnectedness therefore implies a measure that taps into how people regularly move about the region.

The U.S. Office of Management and Budget designates each MSA to capture local economic integration (OMB 2000). The basic building block of the MSA is a county, and so MSA boundaries are coterminous with county borders. In each MSA a county is designated as the "core" based on the size of its population (minimally, 50,000 people) and the portion of the county that is urbanized (at least 50%). Other counties are joined to the core county within an MSA based upon their economic relationship to the core.[10] The OMB uses Census data on work commuting patterns to identify the economic integration of counties. The OMB calibrates an economic integration measure based on flow of workers. An outlying county is added to the

[10] In New England, the building blocks are municipalities, and the assembled units are referred to as New England City and Town Areas (NECTA). Apart from the base unit distinction, the rules governing their identification are identical to the MSA.

MSA if more than 25% of the employed residents of the county commute to the core county or if more than 25% of those employed in the outlying county reside in the core county.

We create several related measures of MSA interconnectedness from numerous data sources. The first follows the OMB's lead; we seek to capture the extent of daily movement of people to different parts of the MSA. The OMB relies on commuting patterns to identify places that are economically interconnected in order to cluster them into a common MSA. While all MSAs should have significant commuting flows between counties (given the OMB classification criteria), naturally there is variation, and it is this variation that we highlight in our first set of measures. *Table P28: Place of Work for Workers 16 Years and Over* of the 2000 Census (SF3) reports the numbers of workers that live in various parts of each MSA (i.e., central city, remainder of MSA), and for each of those groups, whether they work in their own MSA (also central city or remainder) or outside their MSA. From these numbers, we compute the percent of workers that live in the central city and work in another part of their own MSA (*LiveCC_WorkOut*), the percent that live outside the central city and work in the central city of their own MSA (*LiveOut_WorkCC*), and the percent that live in one MSA and work outside the MSA (*LiveMSA_WorkOtherMSA*).[11] While the first two measures would both qualify places as being economically interconnected by OMB standards, we highlight a difference that we believe will be important for donation patterns. The *LiveOut_WorkCC* variable captures a traditional commuting pattern in which many people live in suburban/bedroom communities and commute to work in the central city. The *LiveCC_WorkOut* variable captures a more complex communing pattern in which a higher proportion of people live in the central city but then travel to

[11] A fourth interesting quantity would be *LiveOut_WorkOutOther*, capturing the number of people who live in one outlying part of the MSA and work in another part. Unfortunately, the available data do not allow us to differentiate between those who live outside the central city and work in another part of the MSA (not in the central city) and those who live outside the central city and work in the same part of the MSA.

employment destinations throughout the region.[12] We hypothesize that MSAs characterized by traditional commuting patterns (i.e., high values of *LiveOut_WorkCC*) are less interconnected and therefore will exhibit lower levels of IROD contributions, while MSAs characterized by more complex commuting patterns (i.e., high values of *LiveCC_WorkOut*) will have higher levels of IROD contributions. We hypothesize that MSAs in which many workers commute out of the MSA completely, that is, those with high values of *LiveMSA_WorkOtherMSA*, are less interconnected and therefore will exhibit lower levels of IROD contributions.

A second set of interconnectedness measures is based on commute times. We hypothesize that highly interconnected regions will be those in which a large proportion of workers experience moderate commute times – long enough to reflect a tendency to work in parts of the MSA other than the ones in which they live, but short enough to indicate that many workers are staying within their MSA. Using the Census SF3 *Table P31: Travel Time to Work for Workers 16 Years and Over,* we compute the percentage of workers in each MSA with commute times between 30 and 60 minutes.[13] This ranges from 5.9% in Casper, WY to 37.6% in Atlanta, GA. We also compute *Average Commute Time* for each MSA, hypothesizing that workers in MSAs with very long average commutes are likely to be driving beyond the boundaries of their own MSAs and are less likely to make IROD contributions.

A third measure of interconnectedness is the percentage of workers living in the MSA who use public transportation to get to work *(Public Transit %*). We conjecture that regions with extensive public transit are those in which significant public dollars have been invested in facilitating the interconnectedness of the region, as well as indicating a response to existing interconnectedness. This measure is constructed from *P30: Means of Transportation to Work for*

[12] In other words, the region's economy is more likely to be polycentric, with multiple distinct employment centers.
[13] Our results are highly robust to the exact values used to operationalize this variable (i.e., 20, 25, 35 and 40 minutes at the low end, and 50, 55, 65 and 70 minutes at the high end).

Workers 16 Years and Over in the 2000 Census (SF3) and includes all workers who report using bus or trolley bus, streetcar or trolley car, subway or elevated, railroad, ferryboat, or taxicab. It ranges from 0.1% in Gadsden, AL to 25% in New York – Northern New Jersey – Long Island, NY/NJ/CT/PA.

Our final measure of interconnectedness is based not on commuting data, but rather on concentrations of employment locations throughout an MSA. The U.S. Census Bureau's Economic Census surveys employers every five years about employment and payroll, and reports these data at various levels of aggregation, including zip code (these data are available in the Zip Business Patterns dataset). We conjecture that MSAs with many employment clusters are more interconnected than those with just a few employment clusters. Using the 1987 Zip Business Patterns data, we use the Cluster and Outlier Analysis tool in ArcGIS to compute the local Moran's I statistic for total employment in each zip code.[16] Zip codes with high values of I are those that are surrounded by other high employment zip codes, i.e., that are in the center of a high employment cluster. We compute the percent of zip codes in each MSA that are part of a high employment cluster *(%ZipsInHighEmployClusters*), as indicated by a statistically significant positive value on I; we hypothesize that MSA with a greater proportion of these zip codes will be more interconnected and hence will witness higher levels of IROD contributions[17].

Analysis and Results

[16] Specifically, I=. We use inverse distance as the method for calculating spatial/distance relationships and row standardization to account for different levels of total employment across MSAs.

[17] It is important to acknowledge that the local Moran's I does not measure the number of clusters in an MSA, but rather the number of zip codes that are surrounded by other high employment clusters. As such, it almost certainly understates the total number of zip codes in high employment clusters since those zip codes in the center of a cluster are more likely to have significant values of I than those on the periphery of a cluster.

Our empirical analyses seek to test hypothesis 1 by relating individual donor contribution decisions to MSA-level measures of interconnectedness, controlling for various MSA-level and donor/family-level factors. In table 2, we present a series of regression-type analyses. Each column reports a separate analysis. The unit of analysis in column 1 is an individual donation; the dependent variable is scored "1" if the donation is IROD and scored "0" if it is OROD. Due to the binary dependent variable, we use logistic regression to estimate the marginal effect of each factor on the log of the odds of an individual donor making an IROD contribution relative to an OROD contribution. Standard errors are clustered by MSA to capture any unobserved non-independence among donors within each MSA.[18]

Table 2 Here

We highlight several findings in our results. First, our primary hypothesis - that donors are more likely to contribute to IROD campaigns when there are stronger economic bonds across the region - is supported by the results. The variables listed in bold represent our measures of interconnectedness. As described above, these include the percentage of workers who live and work in different parts of the MSA, the percentage of workers with commutes between 30 and 60 minutes, average commute time, the percentage of the workers who commute via public transit, and the percentage of zip codes in the MSA that are part of high employment clusters. All of these factors are signed as hypothesized and most are significantly associated with the probability of making an IROD contribution.

While all of our interconnectedness measures are signed consistently with our expectations, they capture slightly different aspects of regional interdependence. Consider first the journey to work results. As hypothesized, we find a positive relationship between the

[18] Note that since most of the explanatory variables in this analysis are measured at the MSA level, this clustering accounts for the limited variation in these factors.

probability of making an IROD contribution and the percent of workers in the respondent's MSA who commute out of the central city to work in other destinations within the MSA. This result is strongly consistent with our hypothesis. When workers commute out of the central city and to other destinations around the region, they are exhibiting exactly the sort of complex interconnectedness that forms the basis of our hypothesis. By contrast, when many workers live in the suburbs and commute uni-directionally into the central city, there exists less potential for residents to develop interests throughout the region. The negative result on our live other-work central city variable reflects this less interconnected alternative. Similarly, the negative result on our variable measuring the percent of workers who commute out of the region indicates that in such regions, donors are less likely to look within their MSA for representation through their campaign donations.

Our second set of interconnectedness measures are the percentage of workers living in an MSA with commute times between 30 and 60 minutes and the MSA's average commute time. The effect of the first variable is strongly positive and significant: donors in MSAs with a higher proportion of workers commuting moderate distances are more likely to make IROD contributions than those in MSAs with a lower proportion of workers commuting moderate distances. The effect of average commute time is negative, as hypothesized. In other words, the probability of a donor making an IROD contribution is lower in MSAs where workers drive longer distances to work.

Our third measure of interconnectedness is the percentage of MSA workers who commute to work via public transit. As discussed above, we hypothesize that extensive public transit systems are evidence of a significant public investment that both acknowledges and facilitates a region's interconnectedness. In our analysis, we find a positive relationship between

the percentage of workers who commute via public transit and the probability of an IROD contribution.

Our final measure of interconnectedness is the percentage of zip codes in the MSA that are part of high employment clusters. The positive coefficient indicates that when there are more employment destinations in an MSA, workers are more interconnected with people and places throughout the region and so are more likely to make IROD contributions.

Many of our control variables are significantly related to IROD contributions as well. We find a significant and negative effect of MSA median household income. This effect is contrary to other studies that find positive income effects both on contributions by individuals generally and for out-of-district contributions (eg. Berg, Eastland, and Jaffe 1981, Brown, Powell, and Wilcox 1995, Francia et al 2003, Gimpel, Lee, and Pearson-Merkowitz 2008). In our data, we find that donors in higher income MSAs are less likely to make IROD contributions. We also find that the likelihood of making an IROD contributions is lower when total donations made by individual donors in an MSA is higher. Finally, both the number of zip codes and the number of congressional districts in the MSA are positively and significantly related to IROD contributions. This suggests that as the size of the MSA becomes larger and the number of nearby races increases, the donor's attention is more likely to be caught by one outside of her district.[19]

The logistic regressions also contain two individual/family level control variables: *Family # Contribs* and *Family $ Contribs*. For each donor, we compute the total number and amount of contributions in the 2007-08 election cycle made by members of her family (including the donor

[19] We also include the number of zip codes in the MSA to account for differences across MSAs in the size/number/compactness of zip codes; these differences could potentially affect how employment is distributed across zip codes and hence could distort our *%_ZipsInHighEmployClusters* measure.

herself).[20] While we expect that an individual donor's behavior may be affected by other contributions made by her family during a given election cycle, our theory of regional interconnectedness does not produce clear hypotheses about the precise effects of family behavior on IROD contributions. On the one hand, multiple contributions or high dollar amounts may be indicators of sophisticated contributor behavior. We would expect sophisticated donors to have high levels of information that allows them to target their dollars to the political races in their region that most affect them (i.e., to make IROD contributions). On the other hand, donors who make multiple contributions or who contribute large dollar amounts may be working with party officials or other elites to strategically target their contributions. These elites almost certainly have interests that extend beyond a single MSA and may lead donors to send their dollars outside their regions (i.e., to make OROD contributions).

We find that donors whose families made a large number of donations, and those whose families contribute relatively large dollar amounts, are less likely to make an IROD contribution, supporting our conjecture that more sophisticated donors are working with party or other political elites to strategically target their large, multiple donations.

The logistic regression analysis in column 1estimates the marginal effect of each factor on the log of the odds of an individual donor making an IROD contribution relative to an OROD contribution. While strongly suggestive, there are three potential concerns with this analysis. One is that the analysis is limited to comparing a donor's decision to contribute to a candidate within her region relative to a candidate outside her region (IROD vs. OROD). While this comparison captures an essential part of our theory, it does not speak to how the possibility of in-district contributions plays into a donor's decision process. A second potential concern is that the

[20] The FEC/CRP data includes a unique 12-digit identifier for each donor. The first eleven digits are identical for multiple members of the same family; the final digit indicates the individual donor within each family.

logistic regression analysis treats each donation as independent. However, 35.42% of donors in our dataset made more than one donation herself/himself, and 37.26% are from families that made more than one donation. The logistic regression does not capture this fuller set of choices made by most donors. The third potential concern is that the logistic regression does not account for the dollar amount of each donation, but rather simply codes whether a donation is IROD or OROD.

To address these potential concerns, we estimate four additional models that differently conceive of both the unit of analysis and the dependent variable. Columns 2 and 3 report the results of OLS regression analyses in which the unit of analysis is a donor (rather than a donation) and the dependent variables are the percent of that donor's contributions that are IROD and the share of total dollars contributed by that donor that are IROD, respectively. Columns 4 and 5 report regression results in which the unit of analysis is a contributor's family and the dependent variables are the percent of the family's contributions and dollars that are IROD, respectively. These models contain the same (or equivalent) MSA-level and donor/family-level variables as our model in column 1. As in column 1, standard errors are clustered by MSA. Note that since the column 1 estimates are logit coefficients and those in columns 2-5 are OLS regression coefficients, the magnitudes are not comparable. However, it is still instructive to compare the signs and levels of significance across the several models.

We highlight two main results in the models in columns 2-5. First, all of the interconnectedness measures are of the same sign as in the logistic regression analysis. This consistency in results allows us to be more confident in our claims about how a region's interconnectedness creates conditions for individuals to seek out representation from candidates across her metropolitan region.

The second main result to notice is that the effects of the interconnectedness and control variables are virtually identical across the four regression models. In other words, whether we consider the effects of interconnectedness on an individual's donation strategy or a family's donation strategy, and whether we consider the mix of contribution types or the share of total dollars contributed, interconnectedness matters in strong and consistent ways. Again, we interpret this consistency as evidence of the robustness of our empirical results.

Discussion

Our results indicate that when citizens are freed from the artificial constraints of electoral district boundaries, they often participate in congressional races that are outside their home district but within their economic region. As the economic region becomes more interconnected, donors are more likely to keep their money local: they invest in the campaigns of nearby candidates. The relationship is particularly strong in relatively compact metropolitan areas where commuters travel moderate distances throughout the region for work and regularly take public transit.

The representational relationship suggested by our data is broader than the dyadic relationship posited by most theories of representation: citizens have preferences over electoral outcomes beyond the boundaries of their congressional district. But the representational relationship is not as generalized as implied by the systemic or institutional theories of partisanship, where voters treat Congress akin to a parliamentary system, and aim to maximize their party's control of the legislature. Instead, the representation that we identify lies in between: citizens' political identity extends beyond their district boundaries, but in many cases, not too far beyond. It is a regionalized view. Citizen's interests are pulled across political boundaries by economic interconnectedness and policy spillovers. In an interconnected political

space, citizens support teams of local representatives using carefully targeted regional campaign contributions.

Table 1: Individual Campaign Contributions to US House Candidates, 2007-08

RECIPIENT	NUMBER	%	AMOUNT	%
In Region, Out of District (IROD)	**125,951**	**29.10**	**$104,652,478**	**31.03**
Out of Region, Out of District (OROD)	141,863	32.77	111,095,654	32.94
In district (IND)	165,061	38.13	121,563,179	36.04
Total	432,875	100.00	$337,311,311	100.01

Table 2: Regional Interconnectedness and IROD Contributions
Individual Donations to 2007-08 Congressional Candidates
Z-scores in Parentheses
*p<.10, **p<.05, ***p<.01

	Logit DV=IROD Unit=Donor	OLS DV=PctIROD Unit=Donor	OLS DV=PctIROD$ Unit=Donor	OLS DV=PctIROD Unit=Family	OLS DV=PctIROD$ Unit=Family
%LiveCC_WorkOut	**3.31** **(2.39)**	**.088** **(.34)**	**.075** **(.34)**	**.10** **(.34)**	**.10** **(.34)**
%LiveOut_WorkCC	**-4.056**** **(1.68)**	**-.47**** **(.21)**	**-.47**** **(.21)**	**-.47**** **(.21)**	**-.46**** **(.21)**
%WorkOutMSA	**-3.74***** **(1.047)**	**-.29*** **(.15)**	**-.28*** **(.15)**	**-.30**** **(.15)**	**-.29*** **(.15)**
%Commute30-60	**14.36***** **(4.19)**	**2.34***** **(.52)**	**2.36***** **(.51)**	**2.32***** **(.52)**	**2.34***** **(.51)**
AvgCommute	**-.23**** **(.087)**	**-.033**** **(.012)**	**-.034**** **(.011)**	**-.033**** **(.012)**	**-.033**** **(.011)**
%PublicTransit	**11.30***** **(3.88)**	**.65** **(.57)**	**.65** **(.57)**	**.66*** **(.57)**	**.66*** **(.57)**
% HH Clusters	**.86** **(.66)**	**.28***** **(.091)**	**.28***** **(.091)**	**.27***** **(.092)**	**.27***** **(.092)**
Density	.00020 (.00032)	.000077 (.000048)	.000078 (.000048)	.000080* (.000048)	.000081* (.000048)
MedHHInc	-.000042*** (.000013)	-2.40e-06 (2.04e-06)	-2.43e-06 (2.04e-06)	-2.44e-06 (2.03e-06)	-2.48e-06 (2.03e-06)
NumCD	-.057 (.035)	-.0072 (.0048)	-.0071 (.0048)	-.0072 (.0048)	-.0071 (.0047)
Num Zips	.0042** (.0021)	.00062** (.00029)	.00061** (.00030)	.00061** (.00030)	.00061** (.00030)
MSAContribs$	-5.88e-08*** (1.16e-08)	-6.78e-09*** (1.85e-09)	-6.74e-09*** (1.85e-09)	-6.87e-09*** (1.87e-09)	-6.82e-09*** (1.88e-09)
Family#Contribs	-.050*** (.011)			-.0036 (.0022)	-.0036 (.0022)
Family$Contribs	8.50e-06 (5.68e-06)			4.24e-06*** (1.09e-06)	4.60e-06*** (1.10e-06)
Ind#Contribs		-.0039 (.0026)	-.0039 (.0026)		
Ind$Contribs		5.57e-06*** (1.22e-06)	6.01e-06*** (1.25e-06)		
Constant	4.67*** (1.36)	.63*** (.19)	.63*** (.19)	.62*** (.19)	.62*** (.19)
R^2/Psuedo-R^2	.076	.055	.055	.056	.055
N	237,824	206,694	206,694	194,146	194,146
Clusters	258	258	258	258	258

Appendix A: Summary Statistics

Variable	Mean	SD	Min	Max
IROD Contributions	.31	.46	0	1
OROD Contributions	.32	.47	0	1
PctIROD – Donor	.31	.44	0	1
PctIROD$ - Donor	.31	.44	0	1
PctIROD – Family	.31	.44	0	1
PctIROD$ – Family	.31	.44	0	1
MSA LiveCC WorkOut	.072	.030	.018	.18
MSA LiveOut WorkCC	.17	.063	.042	.42
MSA LiveMSA_WorkOther	.10	.068	.011	.32
MSA % Commute 30-60	.30	.065	.060	.38
MSA Average Commute	28.24	4.64	15.68	35.37
MSA % Public Transit	.073	.075	.0011	.25
MSA % Zips In Hi Emp Cl	.19	.14	0	.49
MSA Density	754.73	535.47	5.37	1891.49
MSA Median HH Inc	47,565	6,954	24,863	62,024
MSA Total Donations	1.38e+07	1.55e+07	2,750	4.46e+07
MSA # CD	15.46	13.66	1	46
MSA # Zip Codes	514.073	476.14	7	1485
Family # Contribs	5.62	9.00	1	106
Family $ Contribs	4788.80	8597.38	10	145,100

Figure 1:

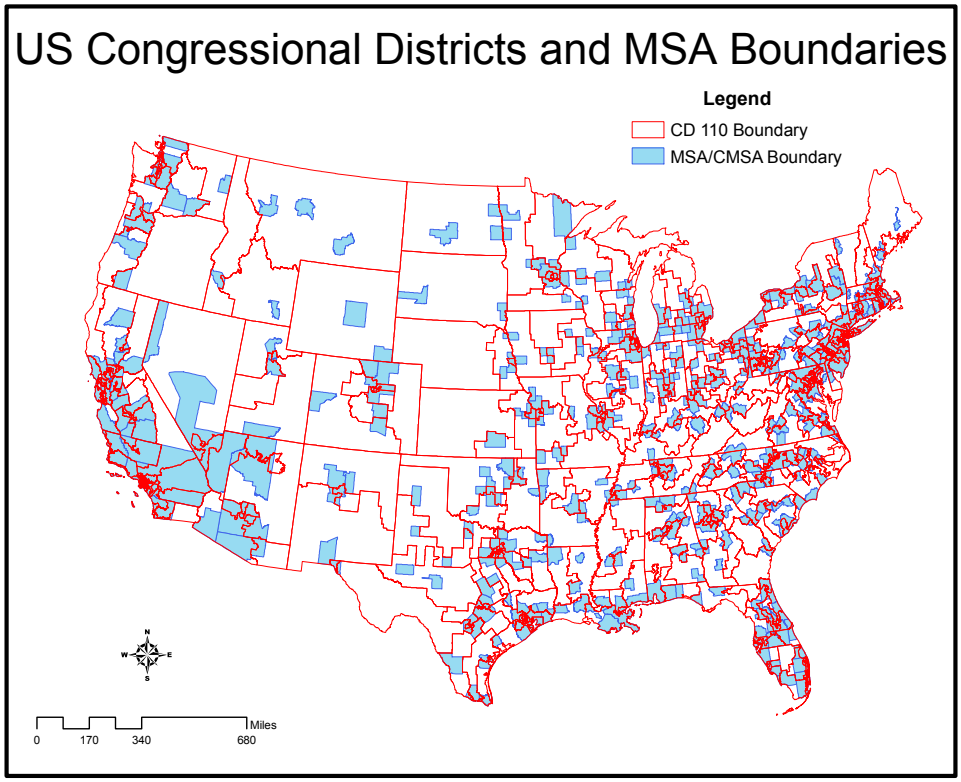

US Congressional Districts and MSA Boundaries
Legend
CD 110 Boundary
MSA/CMSA Boundary
N
W
E
S
0
170
340
680
Miles

Figure 2:

US Congressional Districts in the Detroit, MI CMSA
110th Congress, 2007-08

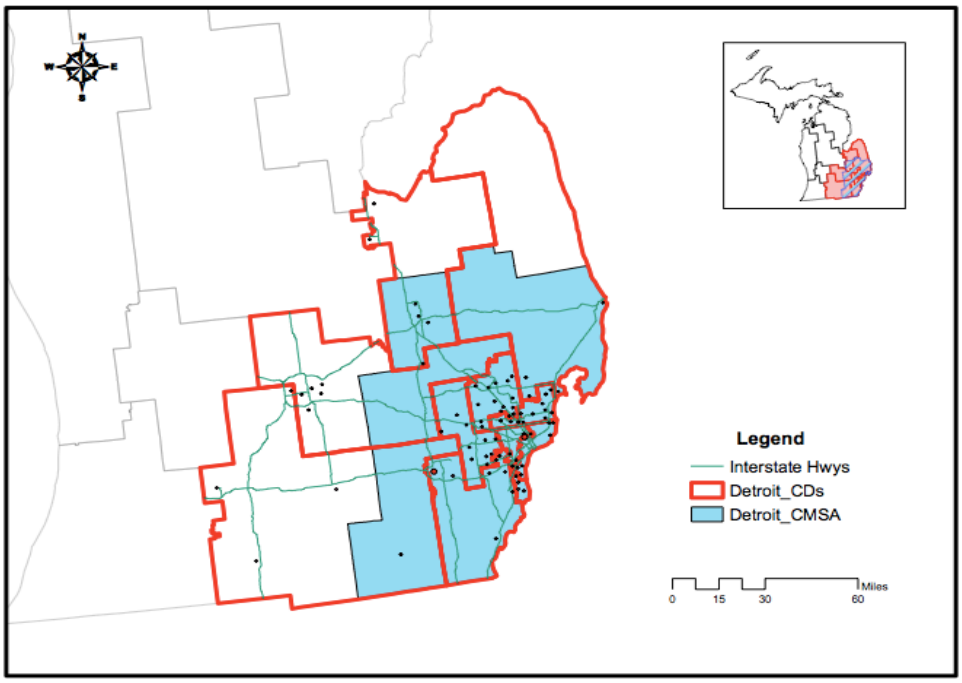


Figure 3: Individual Donations to US House Candidates within the Detroit, Michigan CMSA, 2007-2008.

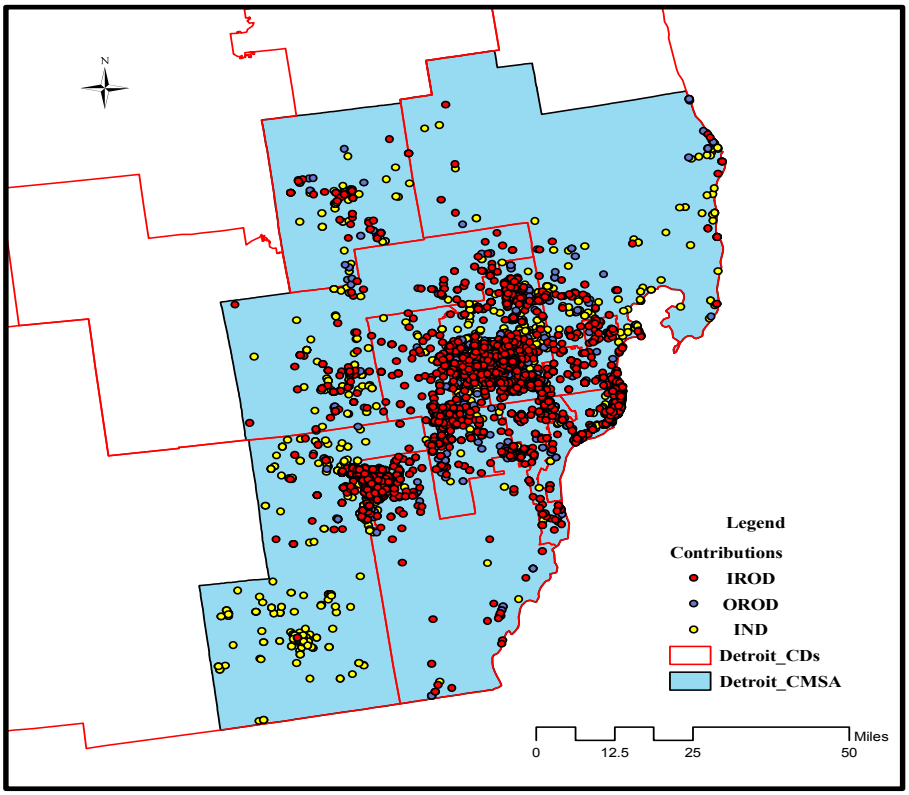
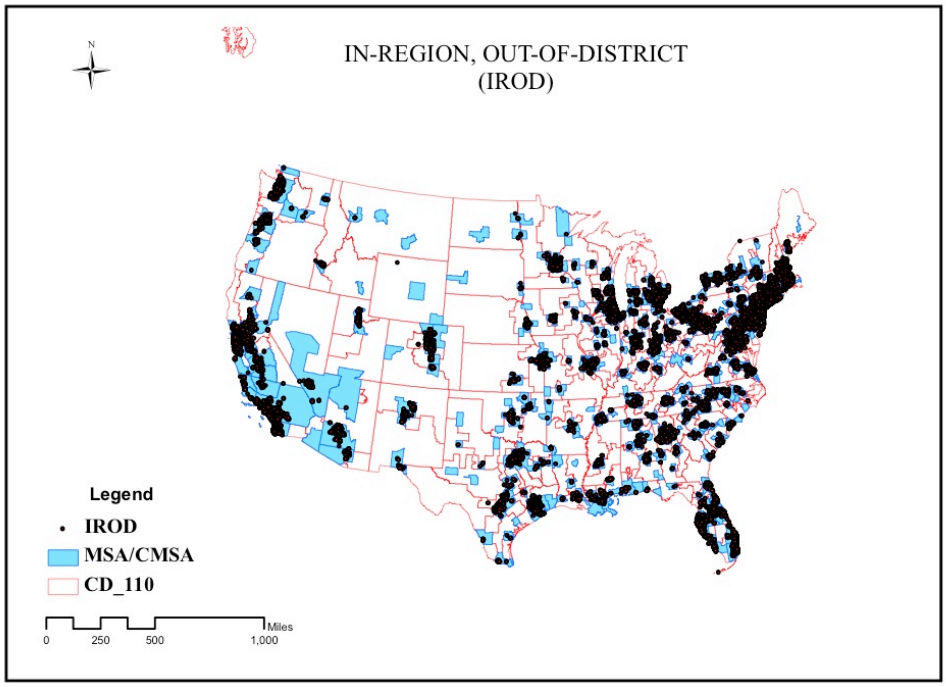
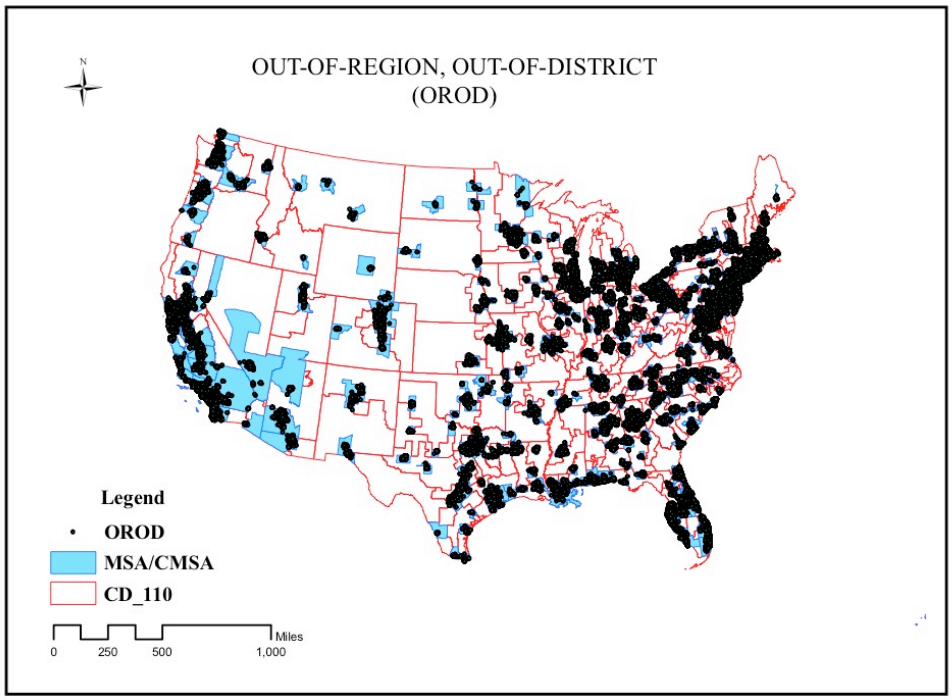


Figure 4:

Figure 4: In-Region and Out-of-Region Contributions to US Congressional Candidates, 2007-08





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