

WIN, PLACE, SHOW

Public Opinion Polls and Campaign Contributions in a New York City Election

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The authors examine how the relative standing of candidates in public opinion polls during a primary campaign affects their ability to raise money. A theory is proposed that considers when individuals are most likely to contribute to the electoral campaigns of their most preferred candidate based on a rational model of political participation and concerns about a candidate's likelihood of winning. The theory is then applied to the case of the 1989 New York City Democratic mayoral primary race. The data indicate that contributors are motivated to support candidates financially by the changing status of a candidate's electoral prospects throughout the campaign.

Inspired by the federal campaign finance laws, many state and local governments have passed their own legislation to curb the corrupting influence of "big money" in political campaigns. Recent state and local reforms offer monetary incentives to candidates for supporting their campaign activity by reaching out to large numbers of small contributors. These reforms were, in part, designed to bring ordinary citizens back into the political process by increasing the value of their contributions to the candidates running for office. Although this change in electoral politics has been significant, very

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few attempts have been made to discover why and when ordinary citizens make small contributions to campaigns. In this article, we argue that campaign contributing by individuals is affected by the candidates' relative standing in public opinion polls as presented in the media.

In the past decade, public opinion polls have become increasingly important in both politics and political science. Although the analysis of polls is a growing area of research (see, e.g., Bartels 1988; Crespi 1989; Herbst 1993; Page and Shapiro 1992; Stimson 1991), the study of how public opinion polls affect the ability of candidates to raise money is a question that has not been fully investigated. We address this question in our examination of the 1989 New York City Democratic mayoral primary.¹ Specifically, we examine how the relative standing of candidates in polls taken throughout the primary affected their ability to raise money for their campaigns. In particular, we propose a model of when individuals are most likely to contribute to the electoral campaigns of their most preferred candidate. The model suggests that as the race between the front-runner and the closest trailing opponent narrows—that is, as the trailer gains on the front-runner in the polls—both candidates raise more money. Thus, not only are front-running candidates successful fund-raisers, but so are challengers who are perceived to be closing in on the leader.

Although there have been numerous studies of different forms of political participation in the United States, very few have addressed the question of what drives decisions to contribute to campaigns. We apply a rational model of political participation to the behavior of campaign contributors by investigating one of the often-cited reasons for supporters to give money to political candidates: the degree that realistic and rational concerns about their candidate's likelihood of winning influence the potential contributor's decision to donate money to the campaign. The decision to contribute to the campaign of a favored candidate is not simply seen as a one-time opportunity; rather, it is a judgment that individuals and organizations update and revise as new information becomes available over the course of a campaign. In the first section of the article, we review the relevant research on public opinion polls and campaign contributing as a form of political participation. Specifically, we draw on existing models of rational voter activity for developing our own model of campaign contributing as motivated by opinion polls. Next, we propose a dynamic model of campaign contributing that links contributions to a candidate's likelihood of election and the extent of voter preferences for one candidate over another. We then apply the model to the case of the 1989 New York City mayoral race and present data to test the propositions derived from our explanation of contributor behavior.

PRIOR RESEARCH

Much of the literature on elections and campaign strategy assumes that polls are an important part of fund-raising. In fact, fund-raisers frequently include poll data in their pitches to potential contributors. However, there have been very few direct examinations of the link between public opinion polls and campaign fund-raising. In most of the political science research on campaign contributions, the role of contextual variables, such as the campaign, in influencing the individual's decision to contribute is not examined. Researchers of political participation, such as Rosenstone and Hansen (1993), recognize that mobilization is central to participation and that contributing money to campaigns is a form of political participation. However, their research is focused on the roles of interest groups, parties and candidates, and such voter characteristics as education and wealth in mobilizing people to participate. They find that closeness of the election increases individuals' likelihood of voting. Although not focusing explicitly on polls, they also argue that the media have a role in creating this perception of closeness. However, they do not see this closeness as a dynamic evaluation that may change over time.

In most of the recent studies of congressional campaign contributions and electoral outcomes, this subject is approached by employing cross-sectional data. For example, Theilmann and Wilhite (1989) examined aggregate contributions to congressional campaigns to determine how the characteristics of the candidates and their districts affect their ability to raise money. They estimated the perceived electability of a candidate but did not focus on the polls themselves or on changes in candidates' poll standing over time. Snyder (1990) found that contributions are related to a candidate's probability of winning, but his measure of that probability was based on a candidate's share of "investor" contributions. Similarly, Jacobson (1980, 1985) studied the dynamic of campaign contributions in congressional elections, finding that elections that are likely to be close—as measured by the winner's share of the two-party vote in the last election—result in inflated contributions to both candidates. There are important differences between these formal approaches to congressional campaign contributions and our research: (1) few formal studies empirically test the relationship between the probability of election and campaign contributions based on public opinion polls, and (2) in none of these studies is the probability of winning taken as dynamic throughout the campaign period. We use changes in poll standings to measure closeness of the race and then examine the relationship between these changes in the polls and the decision of individuals and organizations to contribute to campaigns.

Similar to the work on congressional campaign contributions, other researchers examine the probability of winning and its impact on electoral outcomes, but they do not generally apply this probability directly to campaign fund-raising, nor do they use public opinion polls as indicators of a candidate's likelihood of winning. Examining the relationship between campaign momentum and political participation, Bartels (1988) focused on the outcomes of primaries over the course of a presidential nominating season and showed that the perception of being able to win is instrumental for voters when voting in such primaries. Mutz (1995) studied the effect of the horse race on fund-raising in the 1988 Democratic presidential primaries, but she did not focus explicitly on poll data. Instead, she analyzed the tone of media coverage, looking at the extent and nature of candidate coverage in the press and how the candidate's likelihood of winning was presented by the media. Although varying for each candidate, her findings generally revealed a relationship between the media, or horse race coverage, and the ability of candidates to raise money. Candidates raised the most money during weeks that their press coverage was most positive and the media presented them as "presidential."

Finally, Ferejohn and Fiorina (1974, 1975) raised important questions about the impact of perceived closeness of the election on participation. However, they focused on voting, not campaign contributions. Building on the rational voter model described by Downs (1957), they hypothesized that if voters perceive the election as close, they will see their vote as more likely to affect the outcome, therefore providing some level of benefit to the voter, and thus they will be more likely to vote than if the election is not perceived as competitive. The greater the expectation of a close election, according to Ferejohn and Fiorina, the higher the voter turnout. Our study will apply some of these Downsian aspects of voter calculations to the concept of campaign contributing. As supporters perceive a particular election as tightening, there is an inducement to contribute under the belief that their donation is more likely to make a difference.

MODELING CAMPAIGN CONTRIBUTIONS AND PUBLIC OPINION POLLS

Our model of campaign contributing is derived from the findings of earlier work on elections and the rationales for political participation. We expect contributions to be motivated by an individual's prospective calculation concerning the utility he or she gains from the election of one candidate over another. Specifically, we assume that (1) potential contributors have a

candidate preference, and (2) they believe that their contributions, whatever the amount, help their preferred candidate get elected. Candidate preference is derived from two sources: position-induced preferences and service-induced preferences. The position-induced preference stems from the proximity between an individual's policy positions and that of the competing candidates. Obviously, individuals prefer candidates closer to their own personal policy positions than candidates who are further away. Service-induced preferences arise from an individual's perception of the likelihood that certain personal gains (government contracts, constituency services, etc.) are more likely to be provided by one candidate than by the other.² Contributions, in the view of the contributor, are thought of as a means by which individuals aid in the election of politicians with a more favorable policy position or who are more likely to provide services to supporters. Contributions are seen as useful to the candidate because they provide the needed revenue to purchase advertising and to mobilize supporters for election day.

In contrast to previous approaches to campaign contributing, we view contributing during the campaign period as a dynamic process. Accordingly, contributors do not make one binding decision as to whether they will contribute to a candidate at the beginning of the election period. Potential campaign contributors use information about that candidate's probability of victory to reevaluate their support for their most preferred candidate. This information is provided by public opinion polls throughout the campaign. Therefore, this model expects contributors to not only make a decision as to their personal utility, obtained via the election of their most preferred candidate, but also to combine this with a perception of the likelihood of that candidate's victory to calculate their inclination to make a campaign contribution. Contributions are given not only because an individual prefers one candidate over another but also because he or she believes that the candidate has some chance of winning the election. This is precisely the point at which public opinion polls and candidate preferences interact to affect a supporter's decision to participate in the electoral process.

As Rosenstone and Hansen (1993) found in their study using National Election Survey data, elections that are expected to be close result in increased voter participation, including campaign contributing. We extend their argument to assert that as the perception of each candidate's likelihood of victory changes over the course of the campaign, the ability to raise contributions similarly changes. Specifically, as the race between the front-runner and the trailing candidate tightens, their likelihood of gaining campaign contributions increases. To understand this phenomenon, we return to the assumption that supporters believe contributions are a way they can aid in a candidate's election beyond simply voting. It seems plausible to expect that

individuals with very strong preferences for one candidate would be inclined to contribute to his or her campaign no matter what the prospects of the election. Conversely, a weak supporter has less to gain from the election of his or her preferred candidate if the election is a foregone conclusion. A runaway election, therefore, is one that brings out only the contributions of supporters with strong, one-sided interests.³

The reevaluation of support based on the probability of a candidate's victory is key to this model. As the campaign progresses, new information concerning the change in public support for a candidate is provided through public opinion polls reported in the media. This new information has the potential of affecting the decision to contribute by both weak and strong supporters. If, for example, the front-running candidate's lead begins to slip, individuals with strong preferences for him or her are still going to contribute as they had when the candidate had a large lead in the polls. However, as his or her probability of victory (measured by the difference between the two candidates in the polls) decreases, individuals with progressively smaller utilities for the candidate over his or her opponent become more likely to contribute. Although their preferences are weaker, they still have a measurable preference. As the election goes from a certainty to a noncertainty, successively weaker supporters are induced to offer defensive contributions to aid in the election of their preferred candidate. Similarly, stronger supporters of the drooping front-runner are motivated to contribute further because of the rising prospect of an unpleasant electoral outcome—the election of a much less preferred candidate. On the trailing side of the polls, supporters of the rising challenger see the prospects for victory as increasing and thus are induced to contribute strategically to boost further the possibility of a preferred outcome.

Similarly, we can also expect that as a race tightens and intensifies, campaigns will simultaneously expand their efforts to acquire much-needed funds. Rosenstone and Hansen (1993, 170) found that parties are more likely to mobilize voters in campaigns that are likely to be "toss-ups." Therefore, we can expect in tightening races that campaigns may actively seek more contributions by increasing the awareness of potential contributors to the urgency of their support. Poll results reinforce this urgency by providing a nonpartisan confirmation of these trends.

If these assumptions about contributor behavior are correct, then our model will predict that candidates will receive contributions throughout the campaign, but contributions will increase as the race narrows. There will be an increase in contributions that will be independent of the normal growth in contributions as the race progresses toward election day.

THE 1989 DEMOCRATIC PRIMARY

We examine the 1989 Democratic mayoral primary in New York City for a number of reasons. First, because more money was spent in New York's mayoral race in 1989 than in the average 1990 House or Senate race, we could be sure that this election was a high-profile, modern, competitive one. Second, from the outset, most political commentators felt that the election would be close. Edward Koch was a weak incumbent but had won three times before and was considered a master of New York City politics. David Dinkins was a strong challenger who was assured of a solid base in the primary among African-American voters. In addition, in previous campaigns for Manhattan borough president, he had shown an ability to build support among liberal whites that would make him a stronger candidate than Denny Farrell, the African-American assemblyman who challenged Koch in the 1985 primary. Third, despite both being Democrats, Koch and Dinkins drew from different ends of the ideological spectrum within New York's Democratic Party. This is important for our model that assumes that potential contributors have made up their mind about whom to support before deciding whether to contribute to that candidate's campaign. And last, the decision by both candidates to participate in New York City's campaign finance program meant that each candidate would have to rely on many small contributions to qualify for public funds and that accurate records would have to be kept by the candidates and reported to the city's Campaign Finance Board.

Some background information regarding the specifics of this election is helpful to understanding our analysis. By the time Koch was halfway through his third term as mayor of New York City, it was clear that his reelection would not be as easy as it had been the previous two elections. In 1981, he received 60% of the vote in the primary and 74.6% in the general election. In 1985, Koch won the primary with 64% of the vote and the general election with 74.2%.⁴

Koch's fall from favor coincided with the decline in New York's economy and the end of Ronald Reagan's presidency. After the stock market crashed in 1987, a steady number of jobs in the finance, insurance, and real estate sectors began to leave the city—a trend that continued into the 1990s. As unemployment rose and real estate values declined, city coffers began to empty. Although Koch's mayoralty had depended on the city's robust economy, he might have managed to win a fourth term as mayor had it not been for a municipal corruption scandal and a dramatic rise in racial tensions. Although none of the corruption and bribery charges touched Koch directly, they did land some of his important political allies in jail. Not only had Koch's

reputation as a responsible manager of city finances been severely damaged during his third term, but the public had also grown weary of his abrasive personality, once considered Koch's greatest asset. At the heart of this disaffection were the city's troubled race relations. In 1987 and 1989, two cases of white racist violence against blacks dominated the headlines of the city's tabloids. It is not surprising that these circumstances encouraged strong candidates to enter the mayoral race; by mid-1989, Koch was no longer favored to win his own party's nomination.⁵

The 1989 mayoral campaign was also the first election held under New York City's campaign finance laws, which shifted the candidates' focus toward attracting small donors. Donations from both individuals and organizations were limited to \$3,000 per candidate for the primary and another \$3,000 for the general election. Matching funds were also part of the new plan, but only the first \$500 of any donation would be matched. Thus, if a candidate received a \$3,000 contribution, he or she would get an additional \$500 in matching funds for a total of \$3,500, but if he or she received six donations of \$500, the candidate would receive \$3,000 in matching funds for a total of \$6,000. In addition, matching funds were only awarded for contributions made by people who lived in New York City.⁶

Candidates had the option not to participate in this system. If they chose not to, there would be practically no limit on their contributions, but they would not be eligible for any matching funds.⁷ In addition, the matching funds for the opponents of those candidates who did not participate in the system would increase to a rate of two to one. All of the mayoral candidates in the city's 1989 Democratic primary chose to participate in the campaign finance program. Because candidates could no longer rely on a few very wealthy supporters to maximize their matching funds, it was important for them to appeal to a large number of voters.

As the primary season heated up in 1989, four Democrats announced their candidacy for the mayor's office: Dinkins, Harrison Goldin, Koch, and Richard Ravitch. Both Goldin and Ravitch had credentials that should have made them formidable candidates for mayor. Goldin was in his fourth term as city comptroller, one of three citywide elected officials. Ravitch was the chairman of the Metropolitan Transit Authority and a well-respected member of the city's business elite. It is conceivable that either of these men could have garnered support. Neither Ravitch nor Goldin, however, ever broke 10% in the polls (see Figure 1), were not treated as serious candidates by the media, and never raised enough money to compete effectively.

The two strongest Democratic candidates were both well known in New York politics. Koch, originally a liberal Democratic congressman whose district included Greenwich Village, had become increasingly conservative

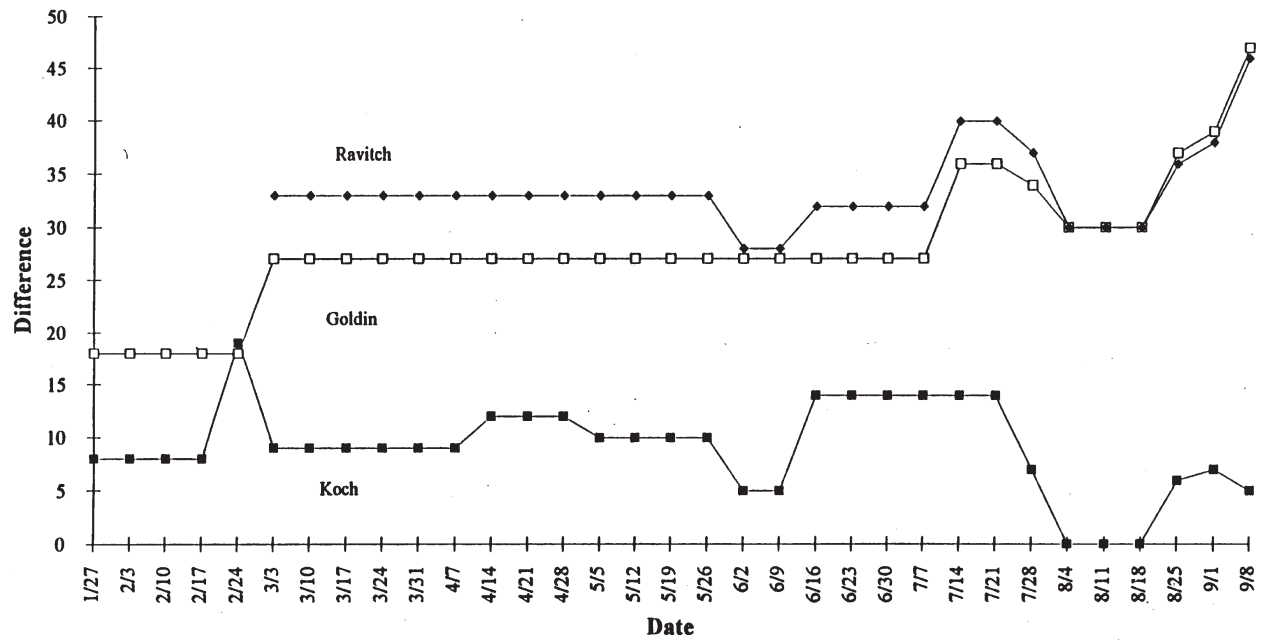


Figure 1: Points Behind Dinkins, All Candidates (January-September 1989)

during his 12 years as mayor. At the time, Dinkins was borough president of Manhattan, a highly visible office in New York City government. A liberal Democrat who had begun his career as a state assemblyman in the 1960s, Dinkins succeeded in winning his party's nomination from the incumbent and becoming the city's first African-American mayor.

DATA AND MEASURES

To test our model using the poll standings of the major candidates, we had to employ continuously updated measures for the probability of each candidate's victory and their campaign receipts. The independent variable of particular interest is the percentage difference in support in the polls between the front-runner and the trailing candidates. The dependent variables are the numbers and amounts of campaign contributions for each candidate during the primary election. The contributions data consisted of totals for all the mayoral candidates that participated in the New York City Campaign Finance Program. The Campaign Finance Board (CFB) provided data on weekly contributions for all four candidates consisting of each candidate's weekly number and dollar amount of contributions from individuals and organizations over the 33 weeks of the study. A contribution week ran from Friday to Thursday.⁸

We are interested in both the number and the total amount of contributions to each candidate for separate reasons. The number of contributions offer an indication of the "number of individual decisions to donate to a particular candidate each week."⁹ Without this measure, smaller contributions are lost in the aggregate amounts. This measure allows us to determine how many individuals or organizations chose to participate in the campaign through contributions to their preferred candidates. The dollar amounts of contributions, on the other hand, provide an indication of what is ultimately important to the campaigns. Campaign finance laws notwithstanding, fund-raisers are still more concerned with the total cash raised than with the number of contributors they are able to attract. Thus we are interested in investigating the effect of fluctuations in poll standings reported in the local media on the amount of money fund-raisers are able to obtain from supporters.

To measure probability of election for each candidate, we collected public opinion poll data from the four major New York City newspapers (*New York Daily News*, *New York Newsday*, *New York Post*, and *New York Times*) for the seven and one-half months of the campaign examined in this study. Using NEXUS for *New York Newsday* and the *New York Times* and microfilm for the

New York Daily News and *New York Post*, we examined each newspaper from 1 January to primary day on 12 September 1989, recording any report of a public opinion poll. The report had to include the date(s) the poll was conducted, the organization that conducted the poll, the number of respondents, the newspaper that first reported the poll (if this was not the first reporting), and the percentage of respondents supporting the relevant candidates. Polls that fit these criteria were prominently reported and often given a headline or a separate graph or table. These polls were usually cosponsored by television stations and, in most cases, received coverage on radio and television, ensuring that exposure would be high.¹⁰ We disregarded poll results that were only mentioned in passing in a newspaper article because they were deemed to have little effect on contributors. By using this methodology, we were certain to include the important polls that were expected to influence contributions. We computed the difference between the leader (that in all cases was Dinkins) and all other primary candidates. Although there were no weeks in our study when Dinkins was trailing, there were three weeks when Dinkins and Koch were running even.

Crucial to our model is an estimate of the time delay or lag between the reporting of poll results in the local media and the decision of individuals to contribute upon seeing the poll because these are not likely to occur simultaneously. Our initial hypothesis is that there would be a two-week lag between changes in a candidate's poll standing and its effect on campaign contributions. The two-week lag is derived from an estimation of the time between the moment a contributor obtains the information concerning changes in poll standing, as reported in the newspaper(s); the point at which the contributor makes a decision as to how he or she will act on this information; and the time the contribution is received and recorded by the campaign organization. However, we cannot be certain that the two-week lag is necessarily correct. Therefore, as part of our analysis of the effect of poll results on campaign contributions, we will investigate which lags are appropriate for each model.

TRENDS IN SUPPORT AND FUND-RAISING

Figure 1 shows poll support for all the candidates during the Democratic primary season, January through September 1989. Despite the fact that Mayor Koch was the incumbent, Dinkins remained the candidate to beat throughout the primary campaign. The polls show that by early summer, Dinkins was clearly the front-runner, but beginning in late July, Koch began to catch him. Most important, after 4 August, the media, both print and

television, portrayed the race as a dead heat. For example, headlines read "Mayor Pulls Even With Dinkins" and "Mayor Erases Dinkins Lead."¹¹ Moreover, according to our calculations, there was no difference between Koch and Dinkins in the polls. Ultimately, Dinkins won the primary by 8 points. Significantly, Goldin and Ravitch never came close to either Koch or Dinkins in the polls. Both trailed by as much as 47 points by the end of the campaign. Therefore, we limit our analysis to the race between Dinkins and Koch.

Although Dinkins was the favorite the entire time, it is important not to overestimate the size of his lead. It was always assumed that the polls would overstate Dinkins's lead because many people would be "undecided," refuse to participate in surveys, or otherwise not admit to pollsters their unwillingness to vote for an African-American (the "Bradley effect"). One Koch fund-raiser said they believed in, and reminded potential donors of, the "Bradley effect."¹² The "Bradley effect," as he called it, is named for Tom Bradley, the African-American former mayor of Los Angeles who lost the 1982 election for governor of California even though exit polls showed him ahead.

The contributions received by all candidates during the primary season are shown in Figure 2. Koch and Dinkins raised virtually the same amount of money during this period. Koch raised \$2,491,000 as compared to Dinkins's \$2,492,000. Neither Goldin nor Ravitch raised significant amounts of money compared to the two front-runners. Figure 3 shows the number of contributors to each candidate's campaign. Dinkins received 12,192 contributions (individuals and organizations combined), and Koch received 7,470 contributions.

The data shown in Figures 2 and 3 do not include funds raised before 27 January. It is important to point out that incumbency certainly had an advantage in early fund-raising, but this advantage withered once the horse race became important. Koch raised \$1,550,000 as compared to Dinkins's \$936,000 before 27 January. Moreover, Comptroller Goldin started the campaign with a \$2,177,000 war chest, whereas Ravitch only had \$87,000 before January 27.

The relationship between poll results and contributions can be seen in Figure 4. For example, the race tightened starting in the week of 28 July, as Koch pulled even with Dinkins during the weeks of 4 August, 11 August, and 18 August. Similarly, the amount of money Dinkins received during the following several weeks increased from just under \$100,000 (slightly above what he was receiving in the weeks following a lead of 14 points) to approximately \$250,000 a week. And as Dinkins regained a lead of 6 points during the week

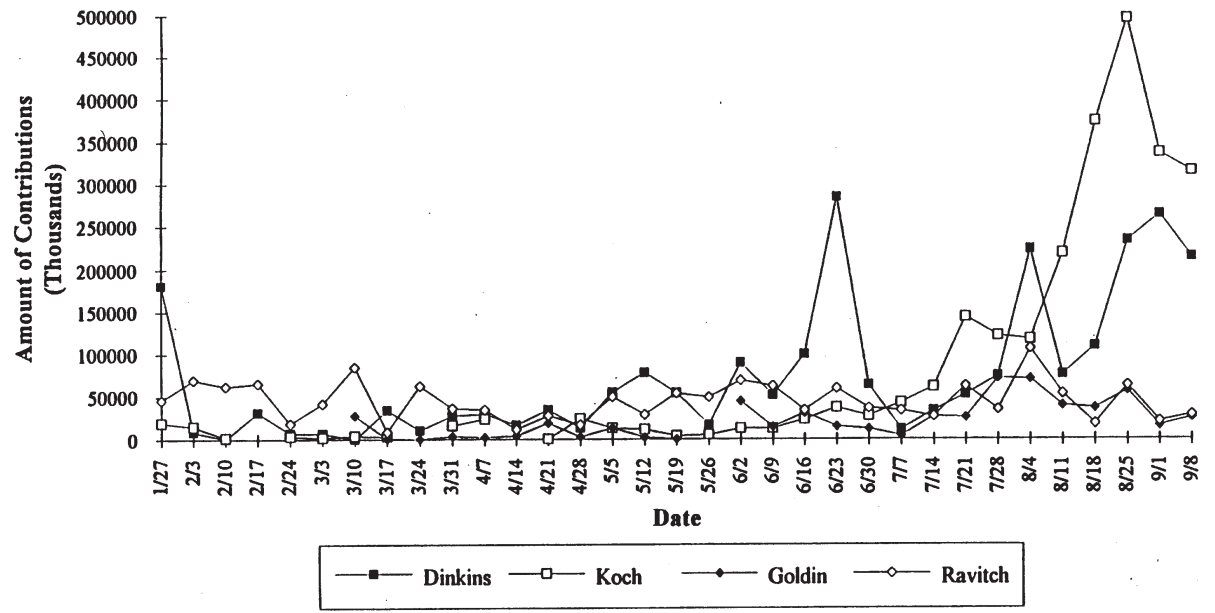


Figure 2: Amount of Contributions, All Candidates (January-September 1989)

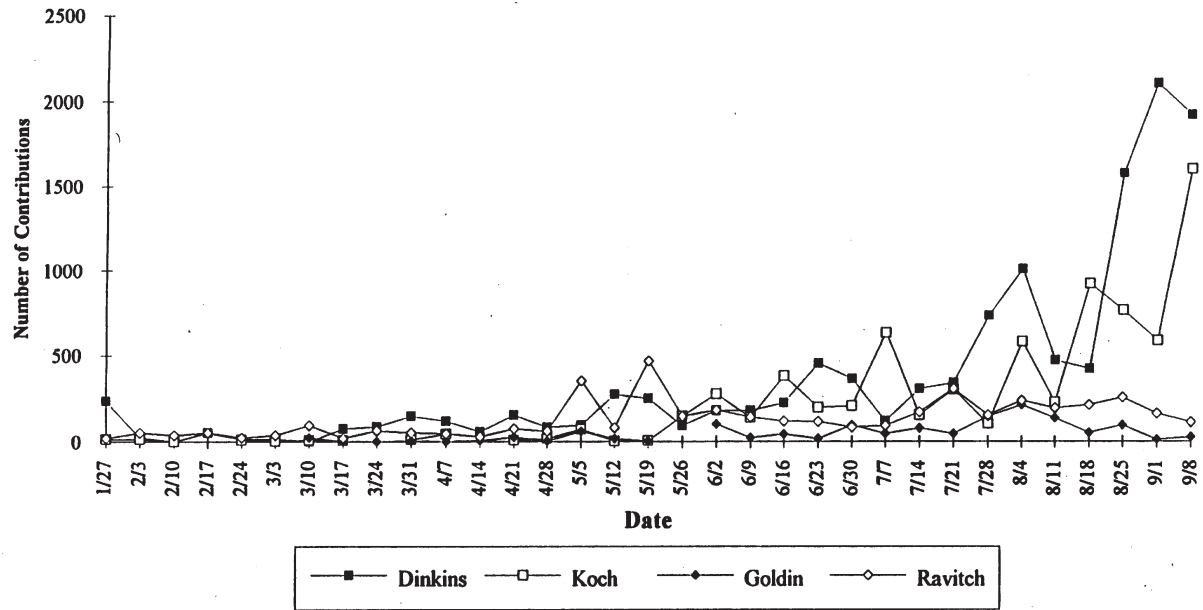


Figure 3: Number of Contributions, All Candidates (January-September 1989)

of 25 August, his contributions took a slight dip during the week of 8 September. One of the weeks when an enormous surge in Dinkins's contributions occurred without a corresponding tightening in the race between Dinkins and Koch was as a result, in large part, of a major fund-raiser that was held in the last week of June (contribution week 23 June). We control for the dates of major fund-raisers in our statistical analysis later.

Figure 4 also shows even more clearly the relationship between the distance that Koch was running behind Dinkins in the polls and its effect on campaign contributions. Koch ran 14 points behind from the middle of June until nearly the end of July. Two weeks after he gained and caught Dinkins in the polls at the end of July through the beginning of August, his campaign contributions sharply rose. The contributions increase from below \$100,000 a week to nearly a half-million dollars during the week of 25 August—two weeks after the middle of the three-week period when the race was a dead heat. As Koch dipped in the polls during the last three weeks of the race, the amount of his contributions subsequently took a comparable dip.

Similar results can be seen in Figure 5, which shows the relationship between the number of contributions and the lead Dinkins held over Koch during the primary. Again, the same surge occurs after Koch and Dinkins ran neck-and-neck for three weeks. There is a strong correlation between the number and the amount of contributions a candidate received in a given week. What does not show up clearly in the number of contributions, however, is the sharp rise resulting from the fund-raiser at the end of June. The spike in the amount of contributions is very likely a result of a moderate number of very large contributions to Dinkins during the week of the fund-raiser. On the other hand, we can see that the surge of contributions toward the end of August, two weeks after Dinkins's lead had disappeared, corresponded with a sharp increase in the number of contributions. Even though Dinkins received less money in each of these weeks than he did during the week of the fund-raiser, the contributions came from four to five times the number of contributors.

Figure 5 also displays the impact of the tightening of the mayoral race and the number of contributions Koch received during the primary. Although not to the same extent as the amount of contributions, there is also a surge in the number of contributions after the race tightened at the end of July and the beginning of August. The one anomaly in these data is the steep increase in the number of contributions Koch received in the last week before the primary. This is likely because of a concerted effort by the Koch campaign to make a last-ditch attempt to win the primary.¹³

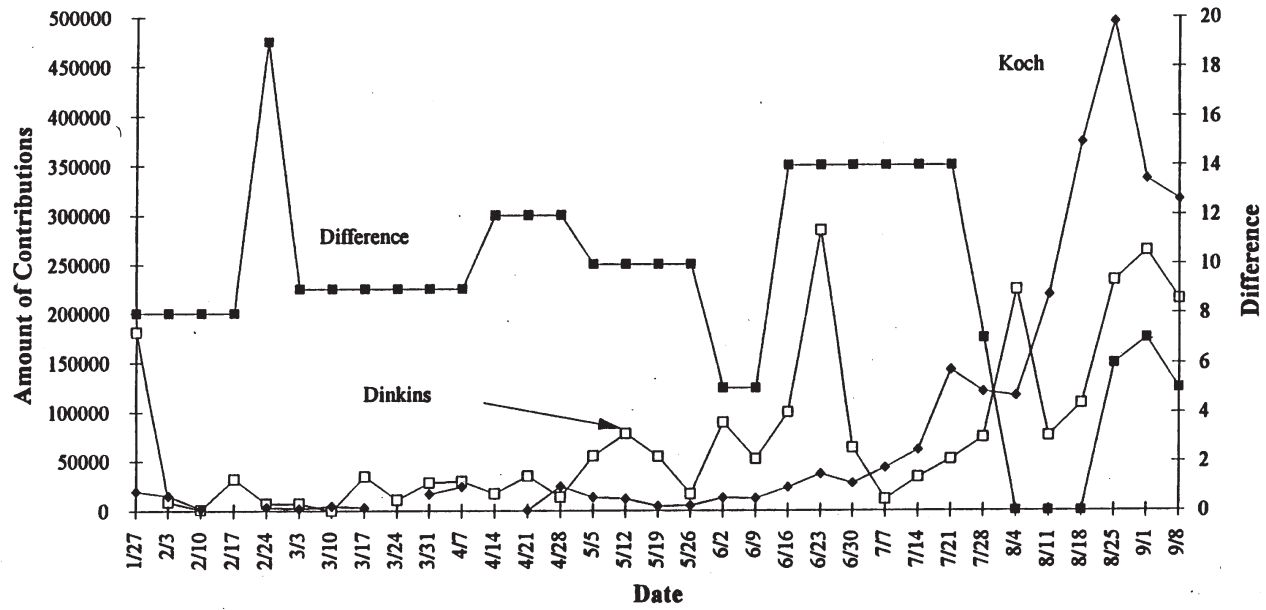


Figure 4: Poll Difference by Contributions (Amount), Dinkins and Koch (January-September 1989)

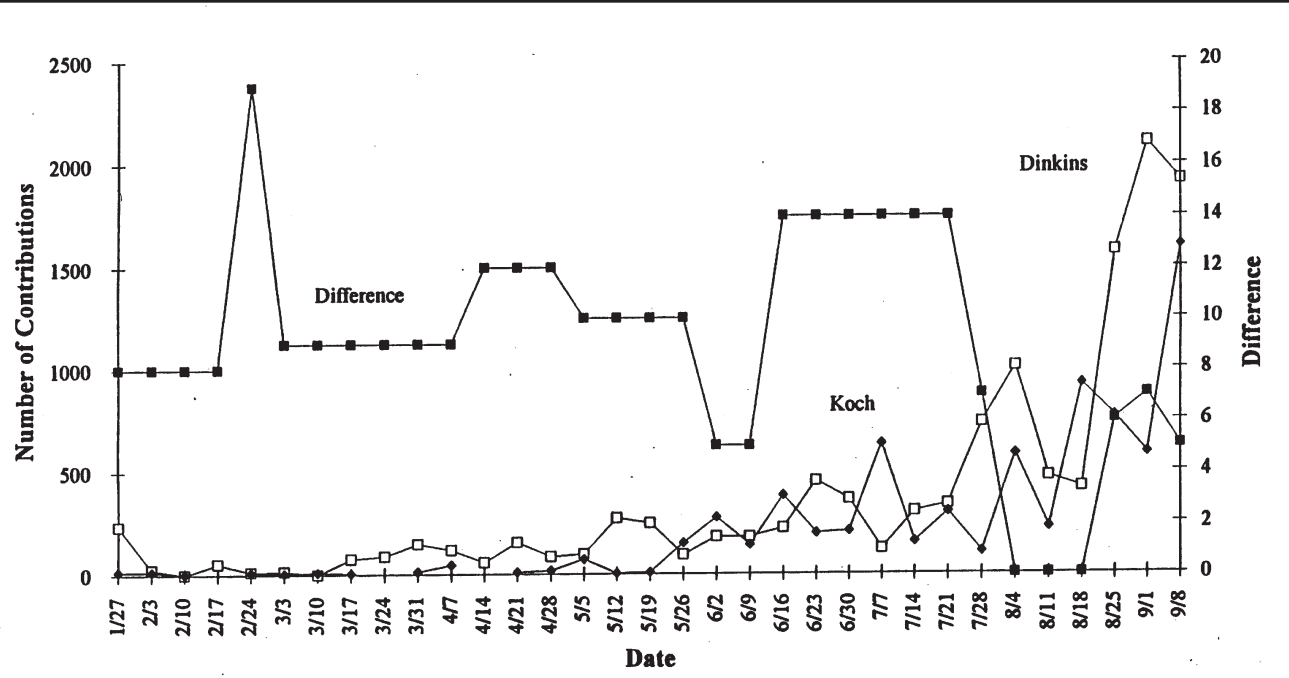


Figure 5: Poll Difference by Contributions (Number), Dinkins and Koch (January-September 1989)

TIME-SERIES ANALYSIS

Table 1 summarizes the time-series analysis for the relationship between the weekly difference between Dinkins and Koch in the polls during the primary period and their corresponding weekly campaign contributions.¹⁴ To model the linear functions, the statistical package employs a transfer function for continuous variables and intervention functions for dichotomous variables, such as the fund-raising event variable (DFUND) (Pankratz 1991). Three of the models tested positive for unit roots, so the models were first-differenced. There was no problem of serial correlation in any of the models.

The first column in Table 1 reports the estimates for the relationship between the difference between Dinkins and Koch in the polls (KDIFF) and the amount of contributions to the Dinkins campaign (DAMT). The findings confirm our intuition of a two-week lag between poll results and contributions. The coefficient for the poll difference at a two-week lag ($KDIFF_{t-2}$) is in the predicted direction and statistically significant. It indicates that as Koch creeps one percentage point closer to Dinkins in the polls, Dinkins will collect a little over \$6,000 more in contributions two weeks later—a consequential amount of money. However, a change in poll standing, such as Koch's 14-point surge in the poll weeks of July 28 and August 4, can account for an extra \$84,600 in contributions to the Dinkins campaign over the two-week period. Obviously, large fund-raising events (DFUND) have a significantly larger effect on the amount of contributions, accounting for more than \$155,000 in donations, but such events occurred very infrequently throughout the campaign.

The second column tells us a slightly different story about the number of contributions to the Dinkins campaign (DNUM). Although in the predicted direction and statistically significant, the number of contributions to the campaign increases only slightly when the race tightens. In fact, a one percentage point tightening in the race accounts for an increase of only about 28 contributions in three weeks subsequent ($KDIFF_{t-3}$) and about 23 in four weeks ($KDIFF_{t-4}$). Because in some weeks Dinkins collected more than a thousand separate contributions, the effect of changes in poll standing does not seem to tell us very much about trends in the number of contributions to the leading candidate, even though statistically significant. However, contrasting the small increases in the number of contributions and their longer lags with the large increase in the amount of contributions after only a two-week lag indicates that the surge in dollar amounts is more likely a result of individual contributors giving larger dollar values in their donations than they were a consequence of a larger number of contributors.

TABLE 1: Primary Election Effects on Campaign Contributions

Independent Variable	Dependent Variable			
	DAMT	DNUM(1) ^a (1 - β)	KAMT(1) ^a	KNUM(1) ^a
KDIFF _{t-1}	—	—	-4449.79* (-2.15)	—
KDIFF _{t-2}	-6039.48* (-2.25)	—	-5311.28** (-2.55)	—
KDIFF _{t-3}	—	-27.60** (-2.57)	-5501.45** (-2.55)	—
KDIFF _{t-4}	—	-23.10* (-2.20)	—	—
KDIFF _{t-5}	—	—	—	-24.75 (-1.99)
DFUND	155018.86** (3.45)	130.76 (2.07)	—	—
Constant	125619.58** (4.28)	341.73** (3.05)	9041.59 (1.11)	39.94 (1.67)
N	33	33	33	33
R ²	.58	.82	.87	.49

a. Equation tested positive for unit roots; therefore, all variables are first-differenced.

* $p \leq .05$, one-tailed test. ** $p \leq .01$, one-tailed test.

The analysis of contributions to the Koch campaign, although confirming our expectation about increased donations during periods of tightening in the election campaign, shows a different pattern in contributions that better reflects Koch's dependence on a smaller number of contributors with deeper pockets. For example, the findings from column 3 in Table 1 support the negative relationship between the difference of the two candidates in the polls and the trailer's ability to collect a large amount of contributions (KAMT). However, the effect of a one percentage point improvement in poll standing is much more profound for Koch, in that his contributions increase significantly for the next three weeks. Such a difference accounts for an increase of about \$4,400 in the first week (KDIFF_{t-1}), \$5,300 in the second week (KDIFF_{t-2}), and \$5,500 in the third week (KDIFF_{t-3}), all of which are statistically significant. Because no major Koch fund-raising events could be identified during the campaign period under study, there is no Koch model that includes a "KFUND" variable.¹⁵ Hence we discover that a reaction to improvements in Koch's poll standing comes in the form of relatively large contributions to the Koch campaign. The contributions to Koch came quicker than the contributions from Dinkins's supporters, and the effect of the polls is sustained for several weeks longer.

On the other hand, analysis of the number of contributions to Koch (KNUM) produces an entirely different lag structure that is not statistically significant at the .05 level, indicating that there is little effect of changes in poll results on the number of campaign contributions. The findings for column 4 in Table 1 indicate that the effect of changes in Koch's position relative

to Dinkins's had only a small effect on the number of contributions (about 25 total contributions) and only five weeks later. Because this estimate has such a long time lag and is not statistically significant, we are persuaded to conclude that there is little relationship here and that the large increases in the amount of contributions in weeks 1 to 3 after improved poll results are coming from the same number of contributors who are just digging deeper into their pockets.

AS POLL RESULTS NARROW, CONTRIBUTIONS INCREASE

Findings from our study of the 1989 New York City Democratic primary support the contention that contributors may be motivated to support candidates not only by the proximity of their policy preferences but also by the changing status of the candidate's likelihood of winning. Controlling for the dates of major fund-raisers, we found that as the race between Dinkins and Koch tightened, both of their contributions increased.

In general, our findings corroborate much of the related research in the field of congressional campaign contributions, in that a candidate's ability to raise money is affected by the candidate's probability of election. The difference here, however, is that the probability of election is assumed to be dynamic or a changing factor throughout the campaign. Our findings suggest that both defensive and strategic contributing exist simultaneously, but the effect is different depending on the status of the candidate. Defensive contributing occurred as the leader began to sag in the polls and the press treated the race as narrowing, therefore increasing the uncertainty of that candidate's victory. Conversely, strategic contributing occurred as supporters of the trailing candidate saw an opportunity for victory when their candidate closed in on the leader and hence increased the number and amount of their contributions. Our results support earlier research based on rational voter models—that voters who perceive elections as increasingly close have greater motivation to vote because of the change in the likelihood that their vote will make a difference. Similarly, we find that supporters who observe the race as becoming tighter are prompted to contribute to either save their drooping front-runner or boost the rising prospects of a gaining challenger. The relationship between narrowing poll results and increasing contributions may also be augmented by growing activity on the part of the campaign to seek more resources for a tightening race, even during the last days of a campaign.

Although there are unique aspects to every election, our analysis should be replicated for other campaigns. As campaign finance laws continue to change

the incentives for candidates to seek relatively small contributions from large numbers of individuals or organizations, it is increasingly important to explore the causes of this form of political participation. Our analysis also suggests some interesting questions about the differential impact that standing in the polls has on African-American and white candidates' ability to raise campaign funds. African-American candidates generally have a difficult time raising money in elections with a majority white voting population. Doing well in the polls may bolster the credibility of their candidacies and encourage their supporters to contribute, especially in tight races with white candidates. In addition, the impact of polls in this big-city election suggests that mayoral elections look increasingly like national elections because they too are now expensive, media-oriented campaigns. Therefore, our approach could be replicated and applied to other local elections, congressional campaigns, or even presidential races. Through application of this model to additional elections, it would be possible to examine campaigns characterized by greater fluctuations in the candidates' poll standings, thus allowing for further tests of our theory. Election campaigns showing tremendous movement in the difference between candidates' support should also reveal similar trends in contributions. If our model of contributor behavior holds for many different types of elections and campaigns, it will aid in the understanding of an increasingly important form of political participation, and it will offer insight into the impact that reported opinion poll results have on our electoral process.

NOTES

1. The 1988 New York City Campaign Finance Law limited contributions in mayoral primaries to \$3,000, down from the \$50,000 New York state limit.

2. For a more complete discussion of position-induced models of campaign contributions, see Morton and Cameron (1992) and Poole and Romer (1985); for service-induced models, see Baron (1989) and Morton and Cameron (1992).

3. This model leaves aside the rare occurrence of contributions to both candidates. Of the more than 25,000 primary contributions to Dinkins and Koch, only 239 (1%) were from common sources.

4. Since the Depression, New York City's registered voters have been predominantly Democrats. In 1989, nearly 70% of New York City's voters were registered Democrats (NYC Board of Elections). As a consequence, most of the serious contests for the mayoralty have been fought in the Democratic primary rather than the general election. There have only been four Republican mayors of New York City during this century.

5. This section draws on the work of Arian et al. (1991), Brecher and Horton (1993), and Fuchs (1992).

6. New York City Campaign Finance Act of 1988 (Local Law No. 8).

7. New York state campaign finance law limits contributions to \$50,000.
8. The contribution week follows the format set by the Campaign Finance Board.
9. We thank Diana Mutz for first suggesting this argument. See Mutz (1995).
10. For each contribution week, we created a parallel "poll week support score" for each candidate that was (1) the percentage of support in the single poll reported in that week, (2) the average percentage of support in two or more polls reported in the same week, or (3) the same percentage of support as the prior poll week if no poll was reported in that week.
11. *New York Post* (9 August 1989).
12. Interview with Lawrence Mandelker, former treasurer of the Koch campaign, February 1993.
13. Interview with Lawrence Mandelker, former treasurer of the Koch campaign, February 1993.
14. We used the SCA time-series package for our regression analysis.
15. Several former Koch campaign officials, including Koch himself, could not remember having any large fund-raising events during this period. Expenditure records obtained from the New York City Campaign Finance Board (1989, 1990) corroborate the fact there were no weeks in which the Koch campaign spent large amounts of money on "events" (defined as spending directly related to fund-raisers) or "invitations" (invitations for fund-raisers).

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