Southern Political Science Association

Better the Devil You Know than the Saint You Don't?
Risk Propensity and Vote Choice in Mexico

Scott Morgenstern
Duke University

Elizabeth Zechmeister
Duke University

This paper argues that personal attitudes toward risk influence vote choice in Mexico. Great uncertainty over the political stances and capabilities of the opposition parties makes risk propensity a key determinant of vote choice. Not all voters who are disenchanted with the status quo take a chance on the less known opposition; risk acceptant voters gamble on these parties, whereas risk averse individuals stick with the "devil they know." Using data from a 1997 national survey and multinomial probit analysis, we show that attitudes toward risk influence voting behavior in Mexico in two ways. First, risk has a direct impact on vote choice. Risk acceptant individuals are more likely, in general, to support the opposition. Second, risk affects vote choice indirectly by conditioning the importance of economic assessments. Risk acceptant individuals are willing to punish negative economic performance, whereas similar, but risk averse, individuals are not.

$\mathbf{C}$ompetition has arisen in Mexican party politics. This new-found democratic vitality has spurred interest in vote choice in Mexico but, because the phenomenon is so new, work on this issue is still nascent. In this paper, we advance this area of inquiry by looking at the influence of risk propensity on Mexican citizens' decision to vote for one of the two major opposition parties over the ruling Institutional Revolutionary Party (PRI) in the 1997 midterm elections.

From 1929 until lately, the PRI and its forerunners dominated Mexico's political landscape. In the last two decades, however, opposition parties gained significant support. In 1988, a group of dissidents splintered from the PRI, united with several existing center-left parties (a majority of which later coalesced into the Party of the Democratic Revolution [PRD]), and officially captured 32% of the presidential vote. Meanwhile, the conservative National Action Party (PAN),

which had never won more than a token share of the vote, won 17% in the 1988 presidential elections. The PRI rebounded somewhat in the 1991 midterm elections, but in 1994 the opposition took 40% of the seats in the Chamber of Deputies and, for the first time, the PRI failed to win all Senate seats.[1] Also for the first time, the PRI acknowledged that its presidential candidate, Ernesto Zedillo, though victorious, failed to receive over 50% of the popular vote. During this period the opposition parties also won electoral victories in many state and local races. Finally, the PRI's decaying dominion collapsed in the midterm elections of 1997 when opposition parties at last achieved a majority in the lower house of Congress.

In addition to cleaner elections and other changes that helped level the electoral playing field, a number of crises have propelled the PRI's slide since the 1980s. Among other events, Mexicans have seen several economic catastrophes; the government's ineptitude in responding to the devastating earthquake of 1985; highly publicized fraud surrounding the 1988 presidential election; the erosion of social and political stability when in 1994 the Zapatistas rebelled, and the PRI's party president, the PRI's presidential candidate, and an archbishop were all murdered; and the incarceration of an ex-president's brother and self-exile of that ex-president on charges ranging from corruption to murder.

These crises notwithstanding, the PRI continues to have a substantial electoral following. In the 1997 midterm elections, for example, a clear plurality of voters supported the PRI's congressional candidates.[2] Continued support for the PRI in the midst of economic and other crises suggests that voters in Mexico do not all vote on the basis of retrospective evaluations, which are considered key variables in models of vote choice in the United States. Rather, in a one-party dominant system such as Mexico, other factors likely play a role and either supplant retrospective evaluations or condition their effects. Our analysis focuses on the 1997 midterm elections to ascertain why the electorate divided as it did—which voters stayed the course and which voters jumped ship.

Our argument is that voting behavior in Mexico can best be understood by taking into account individual-level risk propensity. We argue that in the early to mid-stage of a transition from one-party rule, voters expressing support for a relatively unknown opposition are chronic risk takers. We test this theory using a post-electoral survey of the 1997 Mexican electorate, which clearly shows that risk acceptant individuals were more likely to take a chance on the opposition, whereas otherwise similar, but risk averse, individuals tended to stick with the PRI. In other words, attitudes toward risk shape individuals' choice processes

---

[1] One quarter of the Senate seats went to the opposition. This change was due to an institutional reform that guaranteed the opposition a minimum number of seats.

[2] In the contest for seats in the Chamber of Deputies, the PRI won 38.0% of the actual vote (40.0% of the votes for eligible parties). The PAN won 25.8% (27.2) and the PRD followed closely with 25.0% (26.3). Based on these results, 47.8% of the seats were allocated to the PRI, followed by 25% to the PRD and 24.2% to the PAN.

under the conditions of uncertainty that exist in Mexico. Respondents siding with the opposition in the 1997 elections were generally predisposed to accept risk for the chance of higher benefits, whereas those opting for the PRI preferred to minimize risk in exchange for a more secure outcome. Furthermore, we show that individual propensity toward risk conditions the influence of traditional indicators of vote choice, namely retrospective economic assessments, that may otherwise be obscured in models of Mexican vote choice. We find that risk acceptant individuals "punish" negative economic performance, whereas similar, but risk averse, individuals do not.

   Our key finding, in sum, is that risk propensity is a strong determinant, both direct and indirect, of vote choice in Mexico. This in particular should be illustrative for other contexts where there is a varying level of uncertainty with regard to voters' choices and those voters are characterized by different propensities to accept risk. To develop this argument, this article is organized as follows. In the first section, we briefly review previous studies of vote choice in Mexico and show that they are incomplete but suggestive of the possible influence of risk propensity. In the next section, we develop the relationship between uncertainty, risk propensity, and voting generally and for our specific case. The subsequent section addresses the primary alternative explanation of vote choice in Western democracies: retrospective economic evaluations. While other studies find limited importance of retrospective assessments for vote choice in Mexico, we argue that such assessments are central to vote choice, but that their effects are mediated by voters' attitudes toward risk. We then describe the data that we use to test these two hypotheses, and we discuss our particular operationalization of risk. The penultimate section tests a multivariate model, demonstrating that the relationship between risk propensity and vote choice is particularly strong even when controlling for additional variables. Finally, the conclusion briefly restates our key findings and draws attention to avenues for further research.

Studies of Mexican Vote Choice: The Elusive Risk Variable

   In addition to analyses of risk and uncertainty that we describe below, we borrow from previous studies of Mexican voting behavior to formulate our risk hypotheses. Domínguez and McCann (1996), in their comprehensive study of public opinion and vote choice in Mexico, first suggested the possible role played by risk propensity in the decision to vote for Mexican opposition parties. They argue that in 1988 and 1991, PRI voters "believed that the PRI was getting stronger and that the economy and social peace would be hurt if a party other than the PRI were to gain power" (Domínguez and McCann 1996, 111). In other words, voters who fear negative political, economic, and/or social consequences from an opposition victory tended to support the status quo. Domínguez and McCann, however, do not directly test a risk hypothesis, but rather create a two-stage model of Mexican vote choice in which voters first decide if they

are "for" or "against" the system based on those forward-looking variables identified above. Then, those voters who are against the system—by implication, risk takers—choose among opposition parties based on ideological and socioeconomic divides.

In another book-length study of Mexican voting behavior, Magaloni (1997) suggests that voter uncertainty about the opposition leads many to vote for the "known devil." Magaloni's model shows that "Mexican voters will tend to be more tolerant to poor economic performance because they will be averse to turning the government to an uncertain opposition alternative" (Magaloni 1997, 126). Magaloni does not, however, focus on the influence of risk propensity, but rather on the relationship between a voter's age-dependent experience of the PRI's economic record and the voter's expectations of, and attachment to, the PRI. Specifically, she argues that younger voters are more likely to support the opposition, as they are more familiar with the PRI's poor record in recent years than are older voters who weigh more heavily the many years of stability and growth in their vote choice calculations. Her relevant independent variable, therefore, taps into information asymmetry rather than risk propensity.

Another scholar of Mexican voting behavior, Buendía, has indicated the potential importance of risk propensity, also by explicating the information asymmetries that characterize the Mexican political arena (1995, 1998). His earlier paper includes a test of the direct effect of risk propensity in the 1994 elections, and his results show that attitudes toward risk do appear to directly influence vote choice in 1994. He concludes, however, that presidential approval is "the most important determinant of party choice" (Buendía 1995, 11).

Finally, Cinta (1999) also acknowledges the influence of risk propensity in his study of the 1997 election. Cinta mostly focuses on the nature of uncertainty with respect to individuals' judgments about opposition governing capabilities, showing that people are more likely to vote for the party about which they are more certain, even if that party receives less favorable evaluations than the alternatives. Cinta concludes his study with a brief argument that risk averse tendencies in the Mexican populace help explain support for the PRI.

Influenced by these works, we set forth to more fully examine the relationship between risk propensity and vote choice in Mexico. Our primary hypothesis, once again, is that

> *individuals' attitudes toward risk—their willingness to gamble on a potential "saint"—influenced voting behavior in 1997 Mexico.*

This hypothesis has been suggested, to varying degrees, in each of the above works, though the exact influence of risk has not been examined in a fully specified model using the appropriate statistical technologies and accounting for interaction effects.

The model we test differs from those proposed by the above investigators in a number of critical ways. First, Domínguez and McCann (1996) argue that expectations regarding future economic and social stability under opposition rule

are tied to vote choice. We do not question this hypothesis. Rather our concern is that their key independent variables, which measure voters' assessments of the governing capabilities of the major parties and their evaluations of the current president, are likely endogenous to the voters' party preferences. In other words, voters sympathetic to the opposition should be expected to be more positive about the opposition parties' capacity to govern and less favorably disposed toward the PRIista president. Thus, it is not surprising that the authors find a significant relationship between these variables and vote choice. This endogeneity problem is also present in Buendía's work on the influence of presidential approval. Once again, since the Mexican president is so highly identified with the PRI, asking voters about their feelings toward the president is highly similar to asking them about their feelings toward the PRI. We reduce such endogeneity problems in our model by choosing an exogenous indicator of risk propensity and by using retrospective evaluations of the economy under PRI governance as a proxy for the voters' expectations of the PRI's future economic performance.

Second, Domínguez and McCann find that retrospective evaluations are not significant in the decision to vote against the PRI. In contrast, we find that this result is only true for some voters. By interacting risk propensity and retrospective economic assessments, we are able to show that risk acceptant voters will punish negative economic performance by the dominant party, while risk averse voters will not. In other words, we show that retrospective evaluations do play a role in vote choice for many voters.

Third, as we have already noted, our work differs from that of Magaloni in that she concentrates on age-dependent information asymmetries and finds an important distinction between age groups in their voting habits. Although age may well be related to party choice in Mexico, our analysis suggests that some of this perceived relationship could be a function of younger voters' willingness to accept risk, rather than simply their tendency to be less well-informed about the PRI's overall governing record.

Fourth, our interpretation of risk differs from previous authors. Buendía attempts to explain attitudes toward risk according to prospect theory (Kahneman and Tversky 1979), which argues that individuals vary in their preferences toward risk based on whether they believe a choice involves sure gains or sure losses. Cinta, meanwhile, argues that all voters are risk averse (though to differing degrees), an unjustified conclusion given that his survey data show a tendency among certain voters to indicate a preference for risk acceptant postures. In contrast to these two studies, we use a variable that we argue measures whether voters are chronically predisposed to accept or reject risks. Furthermore, while both Buendía and Cinta offer tentative evidence about the direct impact of risk, we analyze both the direct and indirect influence of risk propensity.

Finally, Buendía's findings regarding risk propensity in the 1994 elections are suggestive, but also suspect. Buendía's model is arguably misspecified in that he uses multinomial logit to estimate his results. In contrast, we use a more ap-

propriate statistical methodology, multinomial probit, to arrive at our results concerning risk propensity (see Appendix).

Modeling Uncertainty and Risk

Citizens of Mexico faced an important decision in 1997: support the well-known PRI or take a gamble on one of the opposition parties, neither of which had ever controlled the federal government. This decision exemplifies the spatial voting models under conditions of risk and uncertainty developed by Shepsle (1972), Enelow and Hinich (1984), Bartels (1986), and Palfrey and Poole (1987). Works by Alvarez (1997), Hinich and Munger (1997), and Berger, Munger and Potthoff (forthcoming) represent more recent attempts to model the effects of uncertainty on electoral behavior. As we have noted, Magaloni extends some of these hypotheses to the case of Mexico, where she argues that uncertainty about opposition parties' governing capabilities and policy stances is paramount, leading the average voter to choose the "devil they know," the PRI, over the relatively unknown PAN or PRD. Buendía (1997) also argues that Mexican voters "dislike candidates they know less about" (Buendía 1997, 17).

Central to most work on vote choice in the United States and Mexico is the assumption that all voters are risk averse; more simply, that individuals prefer a certain outcome to its lottery equivalent. In contrast, we argue that this assumption does not necessarily hold true for an entire population. By removing this unlikely assumption we are able to create a more sophisticated model of vote choice in political systems characterized by asymmetrical uncertainty over the party options.

In the traditional spatial model of vote choice, a voter's utility is defined by a quadratic loss function (Davis and Hinich 1966, 1967; Davis, Hinich and Ordeshook 1970). The voter's utility is a function of the distance between her ideal point and the party's (or candidate's) stated position, in which the loss of utility increases by the square of this distance. Enelow and Hinich (1984) extend this function to include an allowance for uncertainty that the voter has about the candidate. Under Enelow and Hinich's extension, a voter's utility for any given candidate choice is derived from the square of the difference between her own ideal point and the candidate's expected position (the traditional loss function), plus the variance of the expected position the candidate will take (their extension).

Given Enelow and Hinich's representation of a risk averse voter, the individual's decision rule is to choose the option that minimizes the following equation: $(x_i - \bar{x}_p)^2 + \sigma^2$, where x_i is the individual's ideal position, $\bar{x}_p$ is the mean position of the party (or candidate), and σ^2 is the variance attributed to the party's (or candidate's) expected position. The great weight on the level of uncertainty implies that voters are risk averse since individuals who perceive the parties to have relatively similar ideological positions choose the party about which they are more certain.

If it were the case that everyone is risk averse with respect to political choice, as is assumed in traditional quadratic loss models of voting behavior, then nearly everyone in Mexico should have voted for the PRI in 1997.[3] Since many did not support the PRI, the functional form of the model must be incorrect for some voters. The assumption that all voters are risk averse is not likely appropriate if, given similar expected values and great uncertainty over the opposition, some voters choose to support the opposition. As we will show, it is unreasonable to assume that all voters are risk averse in the case of 1997 Mexico; rather, we argue, voters had different levels of risk propensity, ranging from risk averse to risk acceptant.

The influence of risk propensity should be of most importance in situations where the expected value of the parties is similar and the information asymmetry between the two parties is quite large. This situation characterizes Mexico. It is difficult to get "true" measures from the electorate as to their expectations regarding each party's governing capabilities because voters tend to rationalize their vote by reporting higher ratings for their preferred party. Still, evidence suggests that the true expected value for the opposition in 1997 was close to the status quo. According to Buendía (1998), among focus group participants, a common response to questions about the opposition's governing capabilities is that the opposition might do a lot better or, equally, a lot worse. When asked about the economic situation under an opposition government, typical responses included the following: "It is hard [to give an answer] because we have not lived through it" and "You can imagine the worst, or the best" (Buendía 1998, 3). The average of these expectations is the status quo. In such a context, attitudes toward risk should be expected to play an important role.

More important, however, the information gap between the PRI and the opposition is immense. Some amount of uncertainty surrounds all elections.[4] However, the dearth of opposition governing experience and the extent of the PRI's systemic entrenchment implies a much greater uncertainty about the opposition than about continued PRI rule.[5] In particular, two types of uncertainty loom large with respect to the PAN and the PRD: their policy stances and their capacity to govern.

---

[3] Berger, Munger, and Potthoff note that if individuals are risk averse, this powerful "incumbency advantage" makes the status quo nearly unassailable.

[4] Shepsle (1972) discusses four factors that might lead voters to be uncertain about candidates and parties in any given election. These include candidates' tendency to speak "half-truths," the uncohesive team of players that define platforms, the limited political information voters possess, and the differences in information available about incumbents and challengers.

[5] Cinta (1999) concludes that the information asymmetry highly favors the PRI, particularly if voters are risk averse: "The PRI offers the electorate a seventy-year record of its performance and actions in power, which no other party in Mexico has. As a consequence, the electorate's predictions about opposition parties' performance are more uncertain than those predictions about the PRI. Therefore, if the electorate is risk averse then, ceteris paribus, it will vote for the PRI" (Cinta 1999, 174–75).

First, because opposition parties lack governing experience, they have not had a chance to establish clear reputations with respect to policy issues. This lack of visibility is compounded by the fact that in transitional societies, opposition parties foster uncertainty by experimenting with new policy stances (Magaloni 1997, 3). Though already made evident in other studies (e.g., Buendía 1998, Cinta 1999), our data confirm that Mexicans are less certain about the policy positions of opposition parties.[6]

Second, and more important, is public uncertainty about the governing capabilities of the opposition parties. This uncertainty encompasses both the opposition parties' own capabilities and the PRI's likely acquiescence to an opposition victory. The lack of office-holding experience provides Mexicans with limited information over the competence of the opposition to govern. This situation is then compounded by the PRI's longstanding integration with and control of the labor sector, the peasant sector and the bureaucracy, and its own radical wing. A PRI loss could lead to great and unknown changes in the organization of the government as well as a potentially violent reaction from the PRI's hard liners.[7] Given the fact that the most important issues in the 1997 Mexican legislative campaign had to do with improving democracy, fighting crime, social stability, and other "valence" issues on which all parties claimed similar positions, uncertainty over the governing capabilities of the opposition was likely of paramount importance in that year. In sum, there was much uncertainty about how the opposition would rule and whether the PRI would even allow it to take power.

In order to better understand voting behavior under the conditions of uncertainty we have just described, we now examine several hypothetical choices facing the Mexican voter. The three diagrams below are depictions of a hypothetical individual's choices given similar expected values over the parties' governing capabilities and asymmetric levels of certainty. Often such representations depict the choice between different policy options or positions on a left-right continuum. However, because we believe issue positions are less important than the economic situation in Mexico, we have depicted probabilistic outcomes of the parties with respect to a range of economic outcomes. In each of the three cases, the individual assigns a greater amount of uncertainty to the opposition's economic outcome, given their lack of governing experience and the potentially destabilizing impact of displacing the long-entrenched PRI. The voter has little

---

[6] We measured uncertainty over policy position in two ways: (1) the size of the standard deviation from the mean response to a question in the survey that asked respondents to identify the parties' stances with respect to public ownership, and (2) the proportion of respondents who failed to give an issue position for the party. The standard deviations for the opposition parties were slightly higher than that of the PRI, and roughly 26% more people were unable to assess the opposition's issue positions than those of the PRI.

[7] Buendía (1998) notes the following quote from the late Fidel Velazquez, leader of the PRI's labor movement: "We revolutionaries came to power through bullets. Whoever wants to get rid of us cannot do it with votes—he will have to do it with bullets as well" (Buendía 1998, 3).

information with which to predict the economic outcome that would result from an opposition government and therefore can judge only that it might be a good deal better than a mediocre outcome or a good deal worse. The economic outcome with the PRI reflects past economic experience with that party. In these examples, it is somewhere near the center of the scale. Under these circumstances, the individual must then decide whether to vote against the PRI and gamble on the chance that economic performance will be better under the opposition or stick with the PRI and a more certain, but only mediocre, return. As we will show, if the individual calculates her decision based on the risk averse quadratic loss function with an allowance for uncertainty, she will choose the PRI in each of the three cases.

In Figure 1A, the individual with an ideal point at 10 believes the most likely outcome is the status quo, a five on this scale, regardless of which party wins. A PRI victory implies an outcome of five with relative certainty, while with an opposition victory there is a good chance that the outcome will be much more favorable—and an equal chance that the result will be negative. Under the assumption of risk averseness, the voter will choose the PRI since the squared distance from the party's mean to the voter's ideal point is equivalent for both choices, but the uncertainty level squared is larger for the opposition.
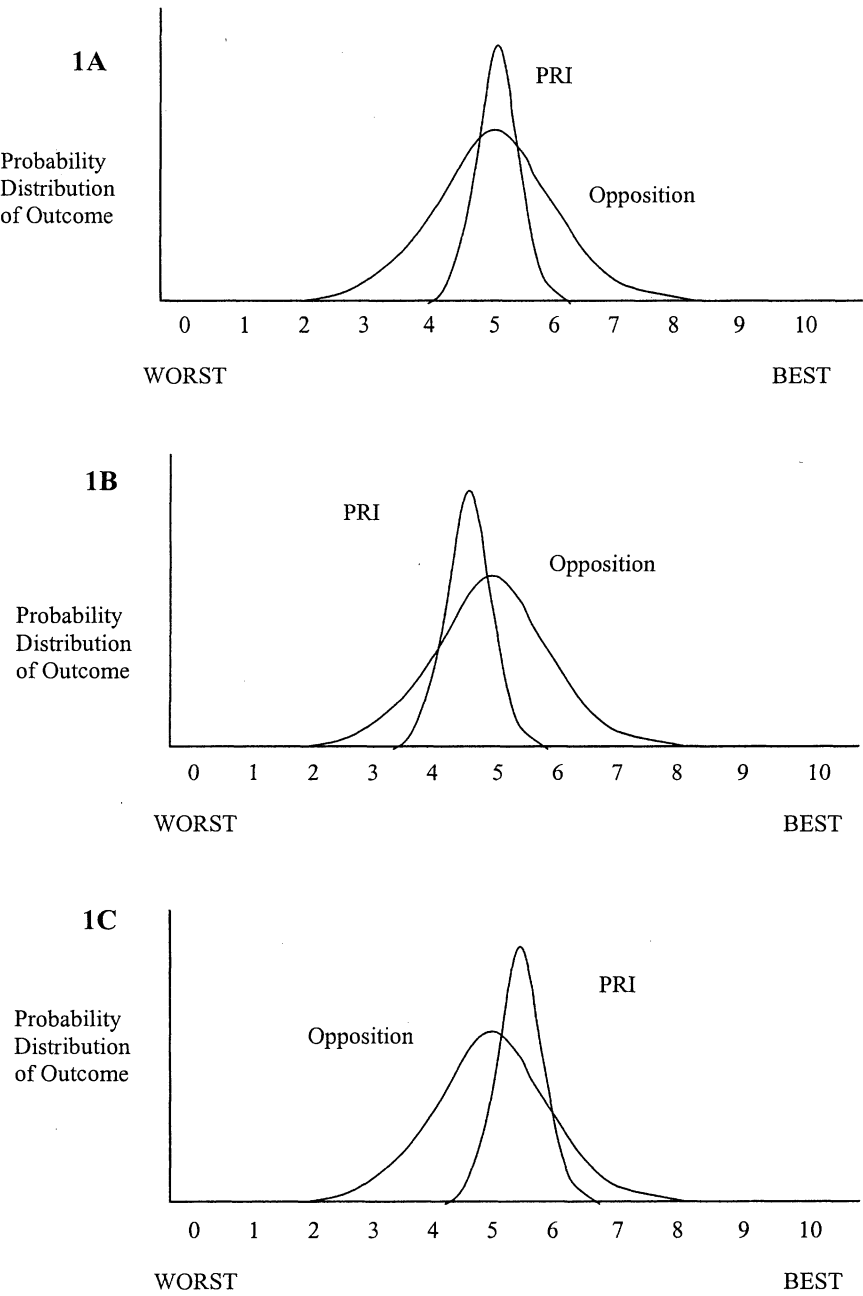
Figure 1B shows the real predicament of formulations that assume all individuals are risk averse. The expected payoff for choosing the opposition is higher than that for the PRI. Nonetheless, a risk averse voter with an ideal point of 10 would still choose the PRI unless the distance between the parties was quite large. Assuming that the variance around the PRI's expected position is one and that around the opposition's is three (as is loosely depicted in Figure 1), an individual who chooses based on the quadratic loss function opts for the PRI over the opposition, because $(5.5^2) + 1^2$ is less than $(5^2) + 3^2$. In contrast, a voter in this position who puts less weight on the uncertainty (i.e., a risk acceptant voter), would be tempted to choose the opposition. In Figure 1C, both the risk averse and the risk acceptant individuals whose ideal points are at 10 should choose the PRI to maximize utility. In sum, if all individuals are risk averse, the PRI would be the preferred party in each of these three cases.

These numbers are, of course, arbitrary. As the PRI moves further from the voter's ideal point, even the risk averse voter's willingness to accept some uncertainty grows. The main point, however, is that even with less than favorable expectations about the PRI, these models imply that unless voters see large differences between the parties, risk averse utility functions predict that voters duck from potential gains that a vote for the opposition could bring.

Over 50% of the Mexican voters defied this prediction in 1997. Why? It is possible that the expected difference between the PRI and the opposition is great enough to overcome the weight of uncertainty but, as we have already stated, we do not believe this is the case for most voters. Given their lack of information about the opposition's governing capabilities, most voters likely believe that things could turn out much better than the status quo under opposition govern-

FIGURE 1

Examples of Possible PRI vs. Opposition Outcomes Under Uncertainty

1A

Probability
Distribution
of Outcome

PRI

Opposition

0   1   2   3   4   5   6   7   8   9   10

WORST   BEST

1B

Probability
Distribution
of Outcome

PRI

Opposition

0   1   2   3   4   5   6   7   8   9   10

WORST   BEST

1C

Probability
Distribution
of Outcome

Opposition

PRI

0   1   2   3   4   5   6   7   8   9   10

WORST   BEST

ment or, equally likely, much worse. The focus group evidence that we noted above supports this assumption.

Alternatively, we believe the relationship between uncertainty and vote choice is improperly specified. Following Shepsle (1972), we expect that voters who are risk acceptant will punish the PRI for mediocre or negative performance and will gamble on the opposition parties for the chance to gain on a given dimension. At least in the situations described by Figures 1A and 1B, risk acceptant individuals would choose to support the opposition.

What exactly does it mean to have a certain propensity toward risk? Consistent with previous work on this subject, we define risk as a difference in the choices of voters with identical initial preference orderings where individuals must choose between a certain outcome and its lottery equivalent. The impact of risk is registered through its effect on the shape of an individual's utility function. The risk averse individual's utility function is *concave* because she receives greater amounts of utility from the certain outcome than its lottery equivalent. On the other hand, the risk acceptant individual's utility function is *convex* because she receives less utility from the certain outcome than from its lottery equivalent. The following graph (Figure 2) and discussion will better illustrate these definitions.[8] For illustrative purposes, we consider a hypothetical choice between the PRI and one of the two major opposition parties, the PRD (Party of the Democratic Revolution).

The above graph represents three individuals with the same preference ordering: They prefer capable governing by the PRD over rule by the PRI and governance by the PRI over ineffective rule by the PRD. In this case, the uncertainty about the PRD implies that the voters must choose between either continued rule by the PRI for certain or an ambiguous alternative assigning .5 probability to capable governing by the PRD and .5 probability to ineffective rule by the PRD. In other words, the individuals must choose between the PRD, with equal probability of extreme positive or negative results, and the PRI, with a certain, mediocre result.[9]

The expected utility of the lottery between the two PRD outcomes is represented by the midpoint of the straight line connecting the point that represents the high utility of the positive PRD outcome with that marking the zero utility of the negative PRD outcome. The utility of option number 1 (continued rule by the PRI for certain) is determined by the shape of the utility functions. As the graph shows, the first individual prefers the certainty of the PRI to the gamble over the PRD (utility of PRI with certainty is higher than the actual mathematical value of the two choices). The second individual is indifferent between the two alternatives, and the third individual prefers the lottery between the two possible PRD outcomes over the PRI with certainty. In other words, at any point

---

[8] This graph and discussion of risk are based on Shepsle (1972).

[9] For the sake of keeping this example simple, we are assuming the outcome of the PRI choice is known with certainty. A more complex model might also show some uncertainty for the PRI.

FIGURE 2

Graph of Three Attitudes Toward Risk
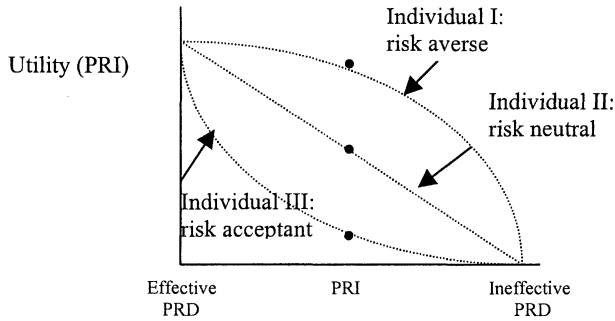
Note: • = individual's utility of the choice of the PRI, given a choice between the mediocre governing capability/economic outcomes by PRI for certain and a fifty-fifty gamble over effective or ineffective governing by the PRD. The dotted lines reflect an individual's utility for a choice with certainty over a mathematically equivalent gamble at any point along the horizontal axis.

on a horizontal axis, given a choice between a lottery with a certain expected value and that same value for certain, the first individual chooses the value for certain, the second is indifferent, and the third chooses the gamble. The first individual is risk averse, the second is risk neutral, and the third is risk acceptant.[10] Attitudes toward risk and individuals' utility functions are thus highly intertwined. Not all voters' utility calculations can be defined by the quadratic loss function. In the case of Mexico, attitude toward risk is particularly relevant because citizens face great uncertainty with respect to the political stances and capabilities of the opposition parties. In such a decision environment, an individual's stance toward risk should influence her vote choice. Risk averse individuals who may prefer the opposition should choose the "devil they know." Risk acceptant voters should be more willing to gamble in hope of securing a better outcome. Thus, as in Figures 1A and 1B, when the expected differential of outcomes is not exceedingly large,[11] our first hypothesis, is that:

H1. Risk averse voters will support the PRI, while risk acceptant voters will turn to the opposition.

[10] For a mathematical formulation of the risk acceptant voter's utility calculation, see Enelow and Hinich (1984).

[11] Ideally, a larger model could be tested that would distinguish between voters with similar mean expectations over the PRI and the opposition, and voters with highly distinct mean expectations. However, the endogeneity of questions about parties' governing capabilities makes it suspect to attempt to test the larger model with the data we now possess. We believe the number of people who perceive a large distinction between the average likely performance of the PRI and the opposition is small enough and the impact of risk propensity is large enough to justify omitting this variable.

A Second Explanation: Retrospective Economic Assessments

Our hypothesis about risk propensity appears contrary to, or exclusive of, standard explanations of voting behavior in Western democracies. These explanations tend to focus on retrospective economic assessments. Previous work has concluded that retrospective evaluations play no more than a minimal role in determining vote choice in Mexico. In this section we present this alternative hypothesis and, based on this discussion and evidence in previous studies of Mexican voting behavior, postulate a second risk hypothesis meant to draw out the actual relationship of retrospective economic assessments to vote choice in Mexico.

Studies of Western democracies have found that voters are "retrospective" in that they take past economic conditions into account in deciding whether to throw out the incumbents (e.g., Fiorina 1981; Key 1966; Lewis-Beck 1988; Popkin et al. 1976). Voters may react retrospectively based on either their "egoistic" or their "sociotropic" views of the economy. If they are egoistically oriented, they presumably ask the incumbent, "What have you done for me lately?" If they are sociotropic, they ask, "What have you done for the nation lately?" Most studies of voting behavior in the United States argue that voters respond sociotropically; they focus on national economic conditions rather than their own material concerns.

Mexico has suffered through some very tough economic times since the early 1980s. Most recently, the 1994 devaluation put the economy into a recession, throwing many out of work and forcing homeowners to contend with skyrocketing interest rates. These problems compound the severe income inequality and dire, widespread poverty that have long characterized Mexican society. We therefore expect that economic evaluations, both egoistic and sociotropic, should be much on voters' minds when they consider their vote choice. Academic and popular press literatures assume that negative evaluations will be associated with opposition support. Since Mexico's economic situation had improved somewhat by 1997, some voters may have associated the improvement with the incumbents. These voters should be somewhat more likely to support the PRI.

Previous studies of Mexican voting behavior have come to mixed conclusions regarding the impact of economic evaluations. On the one hand, Magaloni (1997) and Buendía (1995) find some evidence for these hypotheses in their studies of the 1994 elections.[12] However, Domínguez and McCann (1996) do not find substantial support for a relationship between voting and either type of retrospective opinions about the economy.

We expect that the reason for these conflicting findings may be the exclusion of a risk variable. Consistent with work on Mexico described earlier, we believe that some voters may tolerate mediocre economic performance rather than vote for an unknown opposition. Unlike these studies, however, we believe

---

[12] In addition to the economic crises, Magaloni stresses the importance of the political crises.

that a critical number of voters, risk takers, will punish negative economic performance. Where voters are unfamiliar with the opposition, risk averse voters should be unwilling to punish incumbents for negative economic performance, while risk acceptant voters should be willing to do so. Failure to account for different behavior by these two types of voters obscures the importance of economic evaluations among those who are willing to take chances.

In Mexico, therefore, voters who are risk averse, we believe, should choose to stay with the PRI despite negative economic assessments. Such people should be less willing to gamble on the chance of improvements for fear of falling even further. Those who see the economy in a positive light may also take risk into account. Risk acceptant people may prefer to risk recent advances and support the opposition for a chance of even greater gains. Alternatively, risk averse people who view the economy positively will be unwilling to take this chance. We test this second hypothesis in the analysis by including variables that measure voters' views about the status of the economy and the interaction between that variable and our measure of risk propensity. We expect that negative evaluations will predispose the voters toward the opposition but that these results will be much stronger in the interaction term. From these expectations, we create our second hypothesis:

> *H2. Risk propensity conditions the influence of economic assessments. Risk acceptant voters will punish the incumbent for economic shortcomings and chance better performance under an opposition party, whereas risk averse voters will not.*

Data

The survey that we employ for this study was conducted in 1997 just after the dramatic midterm election when the PRI lost its 70-year hold of the Congress. A team of political science researchers at the Centro de Investigación y Docencia Económicas (CIDE) designed the survey to test hypotheses about partisan identification, retrospective versus prospective voting, the relation of demographic characteristics to voting, regionalism, political knowledge, and risk acceptance.[13] The survey was undertaken by and partially financed by the polling office of the Mexican president, but individuals were unaware of the interviewers' association.[14] The dependent variable, vote choice, was determined by asking respondents to mark a representation of a ballot with the party they voted for in the elections and drop it into a sealed ballot box. A previous study by the survey firm had found that this was a more reliable indicator than directly asking the question.

---

[13] Jorge Buendía was instrumental in the development of questions designed to measure risk propensity, though one of us and many others were also active participants in the study design.

[14] Ulises Beltran, who is a well-known political scientist and currently the president's pollster, was instrumental in the effort.

The survey covered 2,033 households and was designed to yield a nationally representative sample, as well as an oversample for Mexico City. Because we limit our domain to respondents who reported voting for one of the three primary parties in the 1997 elections, we dropped out a substantial portion of the sample, leaving us with 1,263 respondents. This number declines somewhat as we eliminate, first, a small number of respondents who did not answer questions central to our analysis and, second, as we add two additional variables to identify the multinomial probit model.[15] As the survey was conducted with a stratified sample, the values that we use in this paper include a weighting system. Technical notes are available from CIDE or the authors.

Operationalizing Risk

Neither the work on uncertainty by Enelow and Hinich (1984) nor that by Shepsle (1972) offers much guidance in the task of operationalizing risk. Because we are interested in measuring chronic risk propensity, a psychological characteristic as opposed to an assessment of alternative futures, we focus on a question that asked which of two common aphorisms about risk respondents agreed with: (1) Better the devil you know than the saint you don't (*Mas vale malo por conocido que bueno por conocer*), or (2) Nothing ventured, nothing gained. (*El que no arriesga no gana*).[16] We coded risk acceptant voters as those who agreed with the second statement only. We grouped respondents who agreed with the first statement, both, or neither into the risk averse category. We chose not to make the variable trichotomous for two reasons: First, we are interested in the behavior of risk takers versus that of persons who do not favor taking risks, which include risk neutral and risk averse respondents alike; and, second, the relatively low number of respondents that would occupy a "risk neutral" (or ambiguous) category makes these respondents less interesting as a single subject group.[17]

We believe this risk question genuinely taps into chronic psychological predispositions regarding risk. This variable is an improvement over questions used by Domínguez and McCann (1996) that asked respondents if opposition victories were likely to have negative social and economic consequences. As we argued earlier, these variables are clearly endogenous to vote choice since they make clear reference to the parties within the question. It is more than likely that party choice has a direct influence on the respondent's answer to these ques-

[15] Details on the identification of the multinomial probit model can be found in the appendix. Reducing our sample size as a result of the inclusion of these additional variables does not alter the results we achieve on the larger pool of voters in a logit analysis.

[16] Jorge Buendía and Alberto Cinta pioneered the usage of this question.

[17] Once we accounted for missing values on other key variables, there were only 56 respondents (4%) that could be characterized as "risk neutral." We ran an alternative model with a trichotomous variable to ensure our findings were not influenced by our coding decision; the results from this alternative model did not differ significantly from those of our primary model.

tions (e.g., voters who favor the opposition will answer that the opposition will not have negative consequences on social and economic stability). In contrast, the question that we use does not make reference to electoral choices, but rather asks for individuals' general willingness to accept a risky bargain over a certain payoff.

By using the risk variable that we have created based on the above two say-ings, we might chance similar endogeneity problems if a great number of indi-viduals associated the two sayings with the PRI and with the opposition parties, respectively. The parties did recognize the importance of attitudes toward risk, and risk therefore played a role in their campaigns. While the opposition stressed their experience in state and local governments, the PRI reminded voters at ev-ery chance that Mexico had never experienced a national government not con-trolled by its party. For example, Buendía notes and translates the following ad, which the PRI aired on TV in the early period of the 1997 campaign:

> Everything can be lost from one day to the next: your family, your education and your job. What you have achieved with your effort and experience. The PAN and PRD offer a change as if by magic. This is not possible and *risks what we have*. You decide the future of Mexico. Vote for the PRI. (italics are ours; Buendía 1998, 4)

Despite the fact that the parties used the rhetoric of risk to some degree in their campaigns, we do not believe this creates an endogeneity problem for us in the use of this risk variable. First, the two sayings used to create the risk variable are cliches that are so common to everyday life in Mexico and elsewhere in Latin America that it seems highly unlikely that voters would have thought solely of political rhetoric when answering. Mexicans, like Argentinians, Chileans, and others, recognize that these sayings refer to all types of risk, from buying a new house to considering a new job offer. While we recognize that there could be some influence from the campaigns on the people's tendency to portray them-selves as risk takers or as risk averse, we believe this influence is trivial. Sec-ond, it seems far-fetched to assume that the PRI could have convinced such a large percentage of opposition supporters that they were risk acceptant, given that the opposition was simultaneously attempting to portray itself as a reason-able choice, not a gamble. If framing were so important to the campaign, then it seems likely that the PAN's and the PRD's attempts to convince their voters that a vote against the PRI was not a risk would have been successful, therefore biasing the results against our hypotheses.

Finally, to ensure that our variable was not influenced by campaign rhetoric, we subjected the variable to an empirical test. If PRI voters were more likely to respond that they were risk averse because they were influenced by campaign rhetoric, then we should find risk propensity among PRI voters to be negatively correlated with exposure to the campaign. On the other hand, if opposition vot-ers were more likely to respond that they were risk acceptant because of the campaign's influence, we should find that risk propensity among opposition vot-ers is positively correlated with campaign exposure. To test these hypotheses,

TABLE 1

Risk and Vote Choice (%)

	PRI	PAN	PRD	All[a]
Risk averse	62.3	28.5	21.4	38.9
Risk acceptant	37.8	71.5	78.6	61.1
N	496	340	420	1256

Note: Data are from 1997 post-electoral national survey of the Mexican electorate.

[a] Voters who reported voting for one of the three primary parties, the PRI, PAN or PRD.

we created a weighted index of campaign information. Variables included in the index ranged from being contacted by a party official to listening to radio or TV ads to talking to friends or family about the elections. In neither case was exposure to campaign rhetoric significantly correlated with risk propensity.[18]

Based on these arguments and evidence, we believe that the fact that the political parties emphasized the rhetoric of risk in the 1997 campaign shows their recognition of predispositions toward risk as an important influence on vote choice, and their consequent attempt to heighten or allay the fears of the risk averse, and risk acceptant, in order to influence their vote calculations. In other words, parties used the rhetoric of risk in order to try to increase or decrease the perceived costs of voting for the opposition parties, not to attempt to change people's predispositions toward risk.

As we have explained, supporting the opposition in 1997 was a risky venture taken by over one-half of the Mexican voters. Table 1 provides clear evidence in favor of Hypothesis 1, that risk and vote choice are directly related. In this bivariate test, the results are stark: 62.3% of PRI voters are risk averse, and overwhelming majorities of the opposition party voters are risk acceptant (71.5% and 78.6% of PAN and the PRD supporters, respectively).

Multivariate Tests of the Risk Hypotheses

To substantiate the strong bivariate relationship and further investigate our two hypotheses, we test for the impact of risk on the decision to support an opposition party by using multinomial probit analysis (see Appendix). Multinomial probit allows us to estimate separate coefficients for each outcome of the dependent variable (PAN, PRD), relative to a baseline outcome (PRI). Multinomial probit models are nonlinear and, therefore, are evaluated using maxi-

[18] The correlation between risk propensity and campaign exposure among PRI voters was 0.01. For opposition voters, the correlation was 0.05. In probit regression analysis, campaign exposure was insignificant as a determinant of risk among PRI and among opposition voters with or without any control variables.

mum likelihood estimation (MLE). MLE models are designed to find the parameters that maximize the likelihood of observing the collected data. In other words, MLE models converge on a solution through an iterative procedure, rather than solving for the parameters directly as in OLS analysis. In this section, we present the results of our multinomial probit analysis.

The model is built to test for a direct and a mediating effect of risk acceptance on voter's partisan choice. As we have noted, we believe that risk has an independent effect on vote choice and that it conditions the impact of other variables. Consequently, we test for the effect of risk as a unique independent variable and as an interaction effect, conditioning the impact of two economic assessment variables—retrospective individual[19] and retrospective national economic[20] evaluations.

In addition to the risk and economic assessment variables, we include a linear age variable to test for a simple relationship between age and vote choice. Work by Magaloni (1997) suggests that age has a strong influence on vote choice in Mexico. Voters, she argues, are influenced by the past economic performance of the incumbent government, but they continuously update their assessments of this performance. Older voters consider a long time span in which the economy ran well, and consequently do not weigh recent economic crises as much. Using sophisticated methodology and argument, Magaloni shows that younger voters are more sympathetic to the opposition than older voters. We do not test this argument directly but include an age variable to control for the influence of age-dependent experience on vote choice. We do not believe the age variable will be significant, however, given that age and risk propensity are modestly correlated.[21]

We also include education in order to control for differences in attitudes and in political knowledge across sociodemographic groups. The PRI has traditionally mobilized support among less educated rural and urban workers through clientele networks. We therefore expect that lower educational cohorts will show greater support, on average, for the PRI. Including education also controls for individual differences in the asymmetry of certainty that stem from political sophistication and other education-related factors.

---

[19] To test for retrospective egoistic voting, our survey asked: During the last year, would you consider your personal economic situation to have improved a lot, improved a little, worsened a little, or worsened a lot? (Respondents could also answer that their situation was either good or bad but stable, but these options were not read by the surveyor.)

[20] To test for retrospective sociotropic voting, our survey asked: During the last twelve months, would you say that the country's economic situation has improved, has remained the same, or has worsened? (Respondents who answered improved or worsened were then asked whether it had changed a little or a lot; a combination of these two questions yielded our retrospective national economic assessment variable.)

[21] In bivariate tests on our data, younger voters are somewhat more likely to be risk acceptant. 70% of the youngest age cohort (18–25) in our data are risk acceptant, compared to 61% of the overall sample.

Finally, we include two additional variables, economic policy assessment and party placement, because they are necessary to identify the multinomial probit model (see Keane 1992; Alvarez 1997; Magaloni 1997). A description of these identifying variables and their exact role is included in the appendix. We are confident that their inclusion does not distort our results. To test this claim, we ran a version of the model using logit analysis on a dichotomous (PRI vs. opposition) dependent variable. The results that we achieve with the multinomial probit analysis are not significantly different than those that we achieved without these variables in the logit analysis.[22]

The final model, therefore, is the following:

Pr (PAN or PRD / PRI)

$= f$ [risk propensity, education, age, retrospective individual economic

assessment (**retind**), retrospective national economic assessment

(**retnat**), retind $*$ risk propensity, retnat $*$ risk propensity,

identifier1, identifier2].[23]

Table 2 shows the results of the multinomial probit analysis. The model sets up the PRI as the base category, and thus the statistics denote differences from PRI voters.

The results of the multinomial probit model provide confirmation of both our hypotheses. Among our primary variables, only risk propensity and its interaction with national retrospective evaluations are consistently statistically significant. Because we are using a maximum likelihood model, to evaluate the substantive significance of the variables, it is necessary to calculate predicted probabilities by plugging into the whole equation substantively interesting values for the variable of interest, while holding all other variables constant at their means. The predicted probabilities are calculated according to the resulting values and the error correlations (Alvarez and Nagler 1995).[24]

The substantive results displayed in Table 3 provide even greater support for our hypotheses: Even when controlling for other variables, risk has impressive

[22] Both the identifying variables achieve statistical significance in our multinomial probit model. However, the substantive effects of these variables are relatively minimal, the lowest of all significant variables.

[23] Many scholars use partisan identification as an explanatory variable in their attempts to predict voting behavior. We believe this is a mistake in the Mexican case since the two variables are obviously highly interrelated. Because the correlation is generally so high (Pearson's r = .87 in our sample), it is uninteresting to predict voting once we know partisanship.

[24] The error correlations between the PAN and the PRD and the PRI and the PRD are reported in Table 3. To identify the model, the error correlation between the PRI and the PAN was constrained to 0, a common technique. The results, therefore, are particular to this specification of the error terms; however, their robustness was successfully tested in alternative specifications of the model and using simple logit analysis.

TABLE 2

Multinomial Probit Estimates of Vote Choice, 1997

Independent Variables	PAN (/PRI)		PRD (/PRI)	
	Coefficient	P-Value	Coefficient	P-Value
Constant	−0.540	0.006	0.019	0.923
Risk Propensity[a]	0.981	0.000	0.945	0.000
Education	0.707	0.002	0.234	0.213
Age	0.069	0.698	−0.040	0.792
Retro. Indiv. Eco. Assessment[b]	0.004	0.947	−0.028	0.608
Retro. Nat'l Eco. Assessment	0.057	0.486	0.130	0.047
Retro. Indiv. Eco. * Risk	−0.012	0.803	0.027	0.664
Retro. Nat'l Eco. * Risk	0.252	0.018	0.159	0.067
Identifier 1: Economic Policy[c]	−0.166	0.000	−0.166	0.000
Identifier 2: L-R Placement[d]	−0.075	0.000	−0.075	0.000
$\Phi_{PRI,PRD}$	0.832		0.000	
$\Phi_{PAN,PRD}$	0.416		0.002	

N = 914

Note: Numbers in cells represent untransformed multinomial probit coefficients.

[a]Risk propensity coded 1 for risk acceptant.

[b]Both economic assessment variables are coded higher for more negative evaluations of the economy.

[c]This variable measures respondents' perceptions of the PAN and PRD economic policy platforms (see Appendix).

[d]This variable measures the difference between the respondents' placement of the PAN and PRD, respectively, on a left-right scale and the scale's center (see Appendix).

substantive direct and indirect impacts on vote choice. The numbers in Table 3 show the predicted probabilities that a hypothetical individual with certain characteristics will vote for any of the three parties. In the upper half of the table, the individual is assumed to be risk averse and the probabilities that are reported differ according to the person's national economic assessment, with all other variables held constant at their means. The lower half of the table is identical, except that in this case the individual is risk acceptant.

To test the first hypothesis, we compare the predicted probabilities of the risk averse voter to those of the risk acceptant voter while everything, including retrospective national economic assessment, is held constant at the mean value. The center rows in the upper and lower parts of Table 3 show that a risk acceptant individual is nearly 10 percentage points more likely to support the PAN than her risk averse counterpart. While this is substantial, risk propensity clearly favors the PRD. In this case, the chronic risk taker is just over 23 percentage points more likely to vote for the PRD than a similar, but risk averse, individual. The probability of voting for the PRI thus drops significantly (33 percentage points) when we move from examining a risk averse to a risk acceptant voter,

TABLE 3

Effects of Risk and Retrospective Economic Assessments, 1997

	Probability of Voting for		
	PRI	PAN	PRD
Risk averse voters			
Positive economic evaluation	67.1	21.7	11.2
Mean economic evaluation	60.0	19.5	20.5
Negative economic evaluation	53.1	16.6	30.3
Risk acceptant voters			
Positive economic evaluation	48.2	22.8	28.9
Mean economic evaluation	27.0	29.4	43.6
Negative economic evaluation	14.0	33.5	52.5

Note: Cell entries are predicted probabilities of hypothetical individuals voting for the PRI, PAN, or PRD. Except for the identified variables, all values are held constant at their means. For positive and negative economic evaluations, the probability is based on the highest/lowest evaluation possible; the mean value of economic evaluation is 0.213, very close to neutral. Notes on how to calculate first differences from multinomial probit can be found in Alvarez and Nagler 1995.

all else equal. The results show clearly that risk takers are much more likely than risk averse voters to assert a stance in opposition to the PRI regime.[25]

The results also support our second hypothesis, that attitudes toward risk have an indirect effect on vote choice. Our analysis shows that risk is significant as an interaction with national economic assessments, though not with individual economic assessments. This result is consistent with literature on vote choice in the United States, which emphasizes the importance of national economic assessments over personal evaluations. The results for the interaction with national economic assessment match our expectations exceedingly well. Table 3 shows that a person who views the national economic situation to have improved is likely to support the PRI, regardless of risk propensity. For example, the predicted probability that a person will vote for the PRI, given a positive evaluation of the economy, is 67.1% if the person is risk averse and 48.2% if the person is risk acceptant. While the choice of the PAN is essentially unaffected by risk propensity among voters who report positive economic evaluations (as suggested in Figure 1C), the probability of voting for the PRD is a bit stronger among risk acceptant voters who feel the economy improved. Still, the odds remain in favor of a vote for the PRI if the voter reports a positive retrospective economic assessment. In general, voters reward the incumbent PRI for perceived positive economic performance at the national level. Attitude to-

[25] It is also possible that some of the large direct impact we find for risk reflects its interaction with variables that we have not included in this model. We thank John Brehm and Cynthia Kaplan for bringing this to our attention.

ward risk has some impact on these voters but not much, given that they are already favorably disposed toward the PRI.

On the other hand, attitudes toward risk greatly influence the choice to abandon the PRI in light of perceived negative economic performance at the national level. Here the table shows that voters who believe the national economic situation has deteriorated are only somewhat inclined to vote for the opposition, *unless* they are risk takers. That is, despite viewing a decline in the national economy, risk averse voters are more likely to stick with the "known devil." The interaction between risk propensity and retrospective national assessments shows that among those who give negative evaluations of the economy, risk takers are nearly 17 percentage points more likely to vote for the PAN and just over 22 percentage points more likely to vote for the PRD than are their risk averse counterparts, implying a 39 point drop in the probability of voting for the PRI in this scenario. It is important to note that negative economic assessments have some impact on the PRI, even among risk averse voters. For such voters the probability of support for the PRI drops 14 percentage points when such an individual changes from reporting a positive to a negative evaluation, though the PRI is still the most favored party in this situation. The most significant effect of retrospective assessments, however, occurs among risk acceptant voters who rate the economic performance of the PRI negatively. Risk acceptant voters who report negative economic evaluations are nearly 35 percentage points less likely to vote for the PRI than those who applaud the PRI's economic performance. These results clearly confirm our hypothesis that risk propensity conditions the impact of economic assessments such that risk takers will punish poor economic performance and gamble on better results under the opposition, while risk averse individuals are much less likely to do so.[26]

Our analysis shows that age is not a statistically significant variable in an equation in which risk propensity is included. This result may suggest that the finding by Magaloni (1997) and others that age is related to vote choice may be a by-product of the fact that younger voters are, on average, more likely to be risk takers. It should be noted, however, that Magaloni provides a great deal of evidence to suggest that the relationship between age and vote choice in her models

---

[26] To test the robustness of our results, we ran five alternative models including gender, opposition strength, and region dummy variables. We test for the effects of the inclusion of gender and region dummy variables given that these variables are frequently invoked to explain voting behavior in Mexico (Domínguez and McCann 1996; Magaloni 1997). The opposition strength variable is a more precise control for opposition presence than the region dummy variables. It reflects the proportion of votes won by the PAN or the PRD, respectively, in the respondent's home state in the 1997 midterm elections. The first three models added each of the new variables alone, and the last two models included both gender and opposition strength and gender and region dummy variables, respectively. In three of these analyses, the risk variable and its interaction with national economic assessment remained significant at $p<.05$, one-tailed. In the two models that included opposition strength, these variables were significant at an acceptable level of $p<.10$, one-tailed. In each of the alternative models, the coefficients' signs remained the same, and their magnitude did not differ to any significant degree.

is based on weighted retrospective evaluations, which were not accounted for in our model. This relationship, therefore, should be explored in further analyses.

Finally, the results of the multinomial probit analysis show that education is significant only with respect to the choice of the PAN over the PRI. This result is similar to Magaloni's findings for the 1994 elections and therefore lends validity to our overall model (see Magaloni 1997, Chap. 6). While only significant for the choice of the PAN, the substantive impact of education is quite large.[27]

Conclusion

The results presented in this article show that a unique personality trait, risk acceptance, is a key determinant of vote choice in Mexico, which is our example of a polity where the governing capabilities of the opposition are relatively unknown. In this type of situation, voting against the incumbent—the "known devil"—is a risky venture. The analysis shows that not only do attitudes toward risk have a direct impact on vote choice, but they also condition the effects of other factors. Once risk is taken into account, the impact of economic assessments, primarily retrospective national, is no longer obscured and can be better understood. In other words, the analysis shows that risk takers are willing to vote based on retrospective economic evaluations. If they perceive economic decline, they will punish the incumbent regime and take a gamble on the relatively unknown opposition. On the other hand, risk averse voters tend to stick with the incumbent despite poor economic performance.

Our findings show that a psychological predisposition toward risk greatly affects the willingness of voters to "gamble" in situations characterized by an asymmetry of certainty over parties' issue positions and governing capabilities. Further, our measure of chronic risk propensity is not explained by sociodemographic differences among individuals: Neither age, income, gender, education, nor other such variables are significantly correlated with risk propensity. Furthermore, to test the robustness of the risk variable, we analyzed equations that contained these and other variables; in every case, attitudes toward risk remained significant and substantively interesting.

If risk propensity is a chronic characteristic, why did the unprecedented results of Mexico's 1997 elections not occur in earlier elections? We propose the answer lies in the decrease in uncertainty over opposition rule that has occurred over the last two decades as opposition parties have gained control of state and local offices and have captured more national attention. As we argued with Figures 1 and 2, risk takers take calculated gambles. Even risk acceptant voters are unlikely to support a complete unknown. As the amount of uncertainty surrounding opposition parties has narrowed, the odds of a gamble on the opposition have shifted proportionally. Evidence supports the assertion that

[27] With respect to education, which is only significant for the PAN choice, predicted probabilities show that a person with an advanced degree is 24.2 percentage points more likely to vote for the PAN than a similar person with no education.

the public's perception of political instability given an opposition victory has decreased since 1988 (Buendía 1998, 7). A future avenue for this research is to create a dynamic, cross-temporal model designed to examine how the attitudes toward the parties have changed assuming constant risk propensity but changing beliefs about uncertainty.

The finding that risk and uncertainty are important influences on vote choice in Mexico has an obvious observable implication in Mexico's actual electoral arena. If risk and uncertainty are key determinants of voting behavior, then we should expect to find the major parties addressing these concerns. More specifically, the PRI's campaigns should attempt to play upon, and increase, voters' fears of instability due to opposition victory while emphasizing the opposition parties' lack of experience in office. On the other hand, opposition parties should attempt to mitigate concerns of instability and emphasize experience in the offices that they have held. These topics should dominate, or at least be equally salient to, debates over policies and other campaign issues. Superficial evidence would seem to confirm these hypotheses. As we noted earlier, in the 1997 campaign the PRI reminded voters at every chance that the opposition had never governed at the national level, while the opposition parties' campaigns argued that they were experienced parties with proven track records.[28]

Finally, our work has implications for research on vote choice that reach beyond the case of Mexico. Our findings about risk propensity should be relevant in any country where the opposition has never governed at the national level (e.g., until recently, Japan and Italy) or has been out of office for a significant period of time (e.g., Britain's Labour Party prior to 1997). Our work may also be relevant to voting situations (in a legislature or among voters in a plebiscite or referendum) that posit a policy shift away from the familiar status quo. In these and other cases of asymmetrical information, attitudes toward risk should influence voting behavior. Because of the difficulties in operationalizing risk propensity and for other reasons, most studies have assumed that all voters are risk averse. By showing that risk acceptance can be measured and integrated into empirical studies, our study makes this improbable assumption unnecessary.

Appendix
Explanation of the Multinomial Probit Model

Why Multinomial Probit?

Several different models are commonly used to evaluate multiparty decisions. One possibility is the use of simple logit analysis using different combi-

[28] See Buendía (1998) for a detailed discussion of the PRI and the opposition campaigns in 1997. Among the opposition ads that Buendía notes is a TV ad aired by the PAN that includes a background image detailing the number of elected offices held by the PAN. The voiceover states, "The PAN is not a proposal for government. The PAN is a reality. Today one out of three Mexicans are already governed by the PAN" (Buendía 1998, 6; his translation).

nations of the three parties (for example, we could make PRD and PRI the baseline category and examine the choice of PAN separately). However, this method implies that there are substantial similarities among the individuals that support the joined parties (here, PRD and PRI). This justification could allow us to examine the decision between support for the PRI and support for the PRD and the PAN because we assume that those who support the opposition in Mexico have similar characteristics, but this is not likely the case for other combinations of the three parties.

A second method we might have used is multinomial logit. However, multinomial logit makes a strong assumption that is inconsistent with our understanding of party choice in Mexico. This assumption, the Independence of Irrelevant Alternatives (IIA), implies that relative probabilities (with respect to the categories of the dependent variable) will not change if the choice set contains different alternatives. For example, if voters favor the PRI over the PAN by a ratio of 4 to 3, this ratio should remain unchanged given the introduction of the PRD choice or any other party (or parties). It is quite obvious that in Mexico, removing a party as a choice would not result in an equal distribution of those persons to the remaining parties, nor would the addition of a party draw equally from each of the three current party choices. A statistical test, the Hausman test, can evaluate whether or not the IIA assumption will hold with respect to a given choice set. In our case, the Hausman test confirmed that the assumption is not met.

One appropriate alternative technique when IIA is violated is multinomial probit (MNP) because it does not assume IIA in its estimation of the error correlations (Maddala 1983, Alvarez and Nagler 1995). Maddala suggests several other options when IIA is violated, including elimination by aspects, nested multinomial logit, and generalized extreme-value models. None of these techniques is superior to MNP for our purposes. Both elimination by aspects and nested multinomial logit view choice as sequential process, whereas MNP allows for variables to have simultaneous effects on the choice process. Alvarez and Nagler (1995) note that generalized extreme-value models are less preferable to MNP because they impose a stronger assumption on the disturbances than does MNP.

Identifying a Multinomial Probit Model

In order to identify a multinomial probit model, it is necessary to have variables that are unique to each individual, i, and variables unique to each outcome of the dependent variable, PAN, PRI, or PRD (Keane 1992). The number of independent variables is limited by this requirement and the complexity of the math that underlies multinomial probit.[29]

---

[29] Alvarez (1997), Magaloni (1997) and Alvarez and Nagler (1995) provide excellent explanations of the multinomial probit model in the context of vote choice analysis.

It was necessary for us to add two variables unique to each outcome in the choice set. The first of these is a series of questions that probe the respondent's understanding of the economic policy plans of each of the parties (specifically, whether there would be more or less government ownership of companies under that party). The second is a series of questions that ask the respondent to place each of the parties on a left-right scale. "Left" and "right" are often ambiguous terms in Mexico, so we folded over the scale to make a new variable representing the parties' distance from the middle of the scale. This measure is perhaps slightly more meaningful than the left-right scale on its own; however, the primary purpose of this variable is to identify our model, not to draw any interesting results from it alone. To ensure that their inclusion was not affecting our results, we ran a version of the model without these variables using logit analysis on a dichotomous (PRI vs. opposition) dependent variable. The results that we achieve with the multinomial probit analysis are not significantly different from those that we achieved without these variables in the logit analysis. In each case, our key variables have the same sign and their substantive effects are of a similar magnitude.

References

Alvarez, R. Michael. 1997. *Information and Elections*. Ann Arbor: University of Michigan Press.

Alvarez R. Michael, and Jonathan Nagler. 1995. "Economics, Issues and the Perot Candidacy: Voter Choice in the 1992 Presidential Election." *American Journal of Political Science* 39(3): 714–44.

Berger, Mark, Michael C. Munger, and Richard F. Potthoff. N.d. "Why Even Downsian Candidates Will Generally Choose Different Platforms." *Journal of Theoretical Politics*. Forthcoming.

Bartels, Larry M. 1986. "Issue Voting Under Uncertainty: An Empirical Test." *American Journal of Political Science* 30(4): 709–28.

Buendía, Jorge. 1995. "Economics, Presidential Approval, and Party Choice in Mexico: the 1994 Elections." Presented at the annual meeting of the Latin American Studies Association, Washington.

Buendía, Jorge. 1997. "Uncertainty and Voting Behavior in Transitions to Democracy." Presented at the annual meeting of the Latin American Studies Association, Guadalajara, Mexico.

Buendía, Jorge. 1998. *Uncertainty and Regime Transition: The Mexican Experience*, EP-98. Mexico City: CIDE.

Cinta, Alberto. 1999. "Uncertainty and Electoral Behavior in Mexico in the 1997 Congressional Elections." In *Toward Mexico's Democratization: Parties, Campaigns, Elections, and Public Opinion*, ed. Jorge Domínguez and Alejandro Poiré. New York: Routledge.

Davis, Otto, and Melvin Hinich. 1966. "A Mathematical Model of Policy Formation in a Democratic Society." In *Mathematical Applications in Political Science II*, ed. Joseph Bernd. Dallas: Southern Methodist University Press.

Davis, Otto, and Melvin Hinich. 1967. "Some Results Related to a Mathematical Model of Policy Formation in a Democratic Society." In *Mathematical Applications in Political Science III*, ed. Joseph Bernd. Charlottesville: The University Press of Virginia.

Davis, Otto, Melvin Hinich, and Peter Ordeshook. 1970. "An Expository Development of a Mathematical Model of the Electoral Process." *American Political Science Review* 64(2): 426–48.

Domínguez, Jorge I., and James A. McCann. 1996. *Democratizing Mexico: Public Opinion and Electoral Choices*. Baltimore, MD: Johns Hopkins University Press.

Enelow, James M., and Melvin J. Hinich. 1984. *The Spatial Theory of Voting: An Introduction*. New York: Cambridge University Press.

Fiorina, Morris P. 1981. *Retrospective Voting in American National Elections*. New Haven, CT: Yale University Press.

Hinich, Melvin J., and Michael C. Munger. 1997. *Analytical Politics*. New York: Cambridge University Press.

Kahneman, Daniel, and Amos Tversky. 1979. "Prospect Theory: An Analysis of Decision Under Risk." *Econometrica* 47(2): 263–91.

Keane, Michael P. 1992. "A Note on Identification in the Multinomial Probit Model." *Journal of Business and Economic Statistics* 10(2): 193–200.

Key, V. O., Jr. 1966. *The Responsible Electorate*. New York: Vintage Books.

Lewis-Beck, Michael. 1988. *Economics and Elections: The Major Western Democracies*. Ann Arbor, MI: The University of Michigan Press.

Maddala, G. S. 1983. *Limited-dependent and Qualitative Variables in Econometrics*. New York: Cambridge University Press.

Magaloni, Beatriz. 1997. *The Dynamics of Ruling Party Decline: The Mexican Transition to Multypartyism*. Ph.D. diss. Duke University.

Palfrey, Thomas R., and Keith T. Poole. 1987. "The Relationship Between Information, Ideology, and Voting Behavior." *American Journal of Political Science* 31(3): 511–30.

Popkin, Samuel L., John Gorman, Jeffrey Smith, and Charles Phillips. 1976. "Comment: Toward an Investment Theory of Voting Behavior: What Have You Done for Me Lately?" *American Political Science Review* 70(3): 779–804.

Shepsle, Kenneth A. 1972, "The Strategy of Ambiguity: Uncertainty and Electoral Competition." *American Political Science Review* 66(2): 555–68.

Scott Morgenstern is assistant professor of political science at Duke University, Durham, NC 27708.

Elizabeth Zechmeister is a Ph.D. candidate in political science at Duke University, Durham, NC 27708.