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Economics and Ideology: Causal Evidence of the Impact of Economic Conditions on Support for Redistribution and Other Ballot Proposals

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ABSTRACT

There is a large literature demonstrating that positive economic conditions increase support for incumbent candidates, but little understanding of how economic conditions affect preferences for parties and for particulars of their platforms. We ask how exogenous shifts to the value of residents' human capital affect voting behavior in California neighborhoods. As predicted by economic theory, we find that positive economic shocks decrease support for redistributive policies. More notably, we find that conservative voting on a wide variety of ballot propositions -- from crime to gambling to campaign finance -- is increasing in economic well being. We further show that positive economic circumstances decrease turnout and have a mixed impact on candidate choice, highlighting a limitation of inferring policy preferences from party choice.

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I. INTRODUCTION

How do economic conditions affect political behavior and opinions? The answer to this question is important for understanding the dynamics of policy preference, the evolution of public policy and the optimal timing of the introduction of various types of legislation. Although the pundits speak frequently of "pocketbook politics" we have little understanding of how economic shocks affect political views. We know that a good economy is beneficial for an incumbent, be s/he president or governor, Democrat or Republican. (See for example Fair 1978, Peltzman 1987, Wolfers 2002). But we have little evidence on the causal impact of economic conditions on turnout, on support for the major parties, or most importantly, on the various planks of their platforms.[1]

In this paper we begin to fill this hole in the literature by examining the causal impact of economic conditions on neighborhood residents' support for political proposals and major party candidates. We employ a panel of California census tract level voting returns covering eight elections and 91 different ballot propositions. To measure tract-level economic conditions, we create a predicted employment index by weighting national industry employment by the industry mix in the tract at the beginning of our sample time frame.[2] We then ask how census tract voting patterns change in relation to these plausibly exogenous shocks to the value of residents' human capital. Note that

[1] The closest evidence we have comes from correlations relating income to political behavior. That evidence has exposed a puzzle: Red states are less wealthy than blue, but higher income individuals are more likely to vote Republican. Glaeser and Sacerdote (2007) term this an aggregation reversal explained by higher income Americans' belief in more liberal policies, a belief that is learned socially and thus whose correlation with income is multiplied in moving from the individual to the aggregate level. Vigdor (2006) explains the phenomenon by providing empirical evidence that voters consider relative rather than absolute income in choosing a party.

[2] As we explain in the data section, because of data limitations this is actually tract industry mix at a point during our time series predicted by industry mix at the beginning (or prior to) our sample time frame.

because our human capital shocks are coming by way of employment and area employment shocks have been shown to have long term effects on employment and wages[3] (Bartik, 1993 Blanchard and Katz, 1992 and Bound and Holzer, 2000), variation in our index represents permanent changes in residents' economic well-being.

To measure voting behavior, we do not rely on survey data, but rather examine the impact of economic conditions on the true outcome of interest, actual voting returns. This is an important distinction because survey questions, employed frequently in the political economy literature, often do not force respondents to make real tradeoffs. Survey questions ask respondents whether they agree with various policy stances—for example whether education funding should be increased—without actually making the respondents consider, let alone potentially face the implications for their tax bill. Additionally, to the extent that misreporting one's preferences or one's intention to turn out to vote is correlated with local economic conditions, the use of survey data will result in biased estimates of how economic conditions will affect actual election returns.

We find that exogenous improvements to a neighborhood's economic circumstances result in residents' holding more conservative political views, with one exception relating to candidate choice. Using our 91 state level ballot propositions we find a large impact of economic circumstances on support for conservative fiscal and redistributive policies. An increase in employment of one percentage point results in a .9 percentage point increase in support for the conservative side of a fiscal or redistributive

[3] For example, Blanchard and Katz, 1992, find that the effect of employment shocks on unemployment disappear within a decade; the effect on wages nearly disappear in about twenty years and employment remains affected twenty years out, leading the authors to conclude that employment shocks "have largely permanent effects on employment".

ballot. This result is consistent with Meltzer and Richard (1981) whose theoretical contribution demonstrates that support for redistribution is decreasing in productivity.[4]

But beyond providing support for the economic theory, we find that economic shocks predict conservative voting on non-economic issues –like campaign finance and vice—as well. Our effects are large; they are of a similar magnitude to the redistribution results. We then examine this relationship by tract type, dividing tracts into categories by initial economic conditions or by party. The magnitude of the relationship between economic conditions and conservatism varies only slightly across tracts. And within tract type, the relationship continues to hold, of a similar magnitude, across issues.

However, we uncover inconsistent evidence on the effect of economic circumstances on support for major party candidates. We find that positive economic shocks increase support for Republican gubernatorial candidates, but slightly decrease support for Republican presidential candidates. Our results point to a potential danger in inferring policy preferences from candidate choice, which is a tendency in the literature. (See for example Vigdor 2006.) Finally, we also show that positive economic shocks result in decreased turnout.

Thus, at the state level we find remarkable consistency for economic shocks to shift voting on a variety of issues in a more conservative direction. While the relationship between economic conditions and non-economic issues is not predicted by economic theory, it is consistent with McCarty, Poole and Rosenthal's (2006) view that increased party polarization in American politics is driven by increased economic inequality. Branton (2003) finds that partisanship currently predicts individual voting behavior on a

[4] Previous empirical papers have found, consistent with the theory, a negative relationship between survey respondents' attitudes toward redistribution and their reported income. (See for example for example Alesina and LaFerrara, 2005; Corneo and Gruner, 2002; Leigh, 2005 and Ravallion and Lokshin, 2000.)

vast array of ballot propositions from economic to moral, despite the fact that ballot measures were originally implemented to lessen the influence of political parties. We cannot identify the specific mechanism by which economic conditions drive voting on non-economic issues. However, our gubernatorial and proposition results are consistent with economic conditions shifting views on economic issues which leads to a shift in party preference which then informs vote choice on a wide variety of issues. Regardless of the mechanism, our results imply that economic conditions affect state public policy writ large.[5]

Because we rely on aggregate data, one concern about our findings is that they may arise from selection rather than from changes in individuals' political views and behaviors. For example, positive economic shocks may lead relatively more conservative voters to move into a neighborhood. However, we find that our results are robust to the inclusion of covariates to control for selection. Further, registration data provide evidence that the increase in conservative voting occurs despite the fact that relative Republican registration is decreasing as economic conditions improve.

An additional concern about our methodology is that it cannot separate to what extent, within neighborhoods, individuals are voting based on personal economic circumstances or based on what they observe about their neighbors' economic circumstances. Note that this limitation arises primarily from the aggregate nature of our predicted employment index. Even if we had access to individual level voting data, we would still not be able to discern the effects of individual fortunes from community fortunes because the employment "shock" is at a more aggregated level.

[5] Our results also speak to the literature on the causes of belief formation. (See for example Glaeser (2005), Piketty (1995) and Benabou and Tirole (2006) for theoretical contributions and Di Tella, Galliani and Schargrodksy (2007) for an empirical investigation.)

The remainder of the paper proceeds as follows. In the next section we detail the voting data, our measure of employment shocks and estimation strategy. Section III presents our basic results, robustness checks, a discussion of the possibility of selection bias, and finally results by tract type. In section IV we conclude by discussing possible mechanisms leading to a uniform impact of economic conditions on voting on both economic and non-economic issues.

II. DATA/METHODOLOGY

California Tract-Level Voting Data

We turn to the state of California for our analysis for two reasons. First, the state and its residents make frequent use of the ballot proposition. In the 15 year period, 1990-2004, there were 181 statewide ballot propositions in primary, general and special elections. These propositions spanned the spectrum of political issues from tax and fiscal policy to public good provision to campaign finance regulation to moral issues such as gambling. The great advantage of inferring preferences from propositions, as opposed to candidate choice, is that each proposition asks voters to express their views on a single issue at a time. For example, the "Housing and Emergency Shelter Trust Fund Act of 2002" posed a redistributive question: Should $2.1 billion in bonds be issued to provide temporary and permanent housing or housing improvements for battered women, seniors, the disabled and veterans? In the same year, the "Election Day Voter Registration. Voter Fraud Penalties. Initiative Statute" posed an electoral procedure question: Should voters be allowed to register on Election Day?[6] (The first proposition passed; the second failed.) While on each of these issues voting yes would be considered a more liberal position,

[6] The measure would have also criminalized "conspiracy to commit voter fraud".

inferences about one's willingness to redistribute resources are better drawn from one's vote on the first measure.

Propositions may be placed on a California ballot by either the legislature or by citizen's initiative. The legislature must seek popular approval to issue bonds or to amend the state constitution. An individual may place a proposition on the ballot for either of these purposes or to create a legal statute by collecting signatures equal to five percent of the gubernatorial vote in the last election, or eight percent in the case of a constitutional amendment.[7] Passage of a proposition requires a simple majority. Propositions appear on the ballot without any party identification. Thus, another advantage of propositions for our purposes is that they ask citizens to make real political decisions without being subjected to the immediate influence of a party label.

Prior to Election Day, attentive voters can learn whether a proposition is favored relatively more by Republicans or Democrats by reading official ballot pamphlets. Sent to the voter by the state, these pamphlets contain arguments, for and against, signed by high-profile individuals and interest groups. As noted by Gerber and Phillips (2003), these arguments provide voters with "potentially powerful and efficient voting cues" which typically allow voters to discern whether the proposition is being supported or opposed by Republicans or Democrats. In fact, a 1990 poll cited in Bowler and Donovan (1998) finds that 90 percent of California respondents claim to look at the arguments in favor and against the measure, more than report looking at the title or the nonpartisan summary. A second source of the political leaning of the position is the advertisements in

[7] Because individuals may place propositions on the ballot, one might be concerned about a correlation between economic shocks and the type of legislation that is on the ballot. Such simultaneity is not a threat to our identification strategy because we focus only on propositions that are voted on statewide, so that all neighborhoods regardless of economic circumstances are voting on the same initiatives at the same time.

which ranking party members and political interest groups endorse a yes vote on a particular proposition.[8] Thus, the political leaning of the proposition can be ascertained by voters willing to do some homework or by those willing to read and think critically about the propositions in the voting booth. However, propositions do not allow for a quick and easy "straight ticket" party vote and thus potentially allow us to separate the effects of economic circumstances on party choice from effects on support for platform particulars.

The second advantage of California is that the Statewide Database, maintained by the Institute of Governmental Studies (IGS) at the University of California at Berkeley, provides data on aggregate vote outcomes and voter registration information for all statewide primary and general elections held in California since 1990. The primary unit of analysis in the Statewide Database is the voting precinct. We aggregate to the census tract, at which level employment data are available. (The aggregation process is detailed in the Data Appendix.)

In order that our biennial employment index has a consistent temporal relationship with our voting variables, we restrict attention to general elections which occur in November of even years in California. To avoid any correlation between regional economic conditions and what appears on the ballot, we focus only on those contests in which all voters in the state may participate. In our eight election years, 1990-2004, we cover four presidential elections, four gubernatorial elections, five United States

[8] For example, Governor Arnold Schwarzenegger appeared in television advertisements supporting a set of ballot initiatives he sponsored for the 2005 special election. Similarly Los Angeles Mayor Antonio Villaraigosa narrated a number of television ads that promoted a 2006 ballot initiative that would have provided universal pre-school to California families. In addition, well known special interest groups such as the California Teachers Association and the Howard Jarvis Taxpayers Association commonly sponsor advertisements that either support or oppose various propositions.

senatorial elections,[9] and 91 ballot propositions. The 91 propositions include all general election propositions for the years 1992-2004 and 10 of the 28 propositions on the 1990 general election ballot.[10] The most famous propositions in our sample are Proposition 187 in 1994 which denied illegal immigrants access to public services and Proposition 209 in 1996 which prohibited public discrimination on the basis of race, sex, color, ethnicity or national origin and thus ended affirmative action considerations in admissions to the University of California.[11] (Both propositions passed.)

Based on these contests, we create three types of dependent variables for our analysis:

a) Turnout: We define turnout as the total number of votes cast in the electoral contest divided by the voting eligible population (i.e. citizens 18 years of age and older).[12] Average turnout is 33 percent in the three gubernatorial elections for which we have total vote data, 49 percent across our four presidential elections and 44 percent across our senatorial elections.[13] (See Table 1 for sample means.) Thirty nine percent of eligible voters participate in the average proposition, with a mean of 32[14] and 45 percent for propositions concurrent with gubernatorial and presidential elections respectively. Thus, it appears that roll off—or ballot noncompletion—is not a significant phenomenon in regards to proposition voting.

[9] We omit a special senatorial election that occurred concurrently with the 1992 general election.
[10] California began collecting statewide election results at the precinct level in 1990 and only collected results for a select number of propositions in that year.
[11] Proposition 227, which required that public school instruction be conducted almost exclusively in English, is not in our sample because it appeared on the 1998 primary election ballot.
[12] The 1990 census provides citizenship by age and thus we can directly calculate voting age population. For 2000 age by citizenship is no longer available. We predict voting eligible population in 2000 using the following equation: voting age population (2000) = Number of citizens (2000) * Percent of citizens who are adults (1990) *Percent of population that is adult (2000)/Percent of population that is adult (1990). We obtain the voting age population for the remaining years by linear interpolation.
[13] Data on the total number of votes cast in the 1990 gubernatorial election is unavailable as data on votes cast for minor party candidates was not collected or released.
[14] Or 31 percent if we eliminate 1990, the year for which our ballot data are incomplete.

b) Share voting for the incumbent: We follow the literature to define this variable as the incumbent share of the two party-vote. An average of 49 percent of votes were cast for the incumbent in our gubernatorial elections, 50 percent in presidential elections and 58 percent in our senatorial election sample.

c) Share voting for the Democratic (liberal) candidate or side of the issue: For gubernatorial, senatorial and presidential elections, the definition of this outcome is straightforward: the Democratic share of the two-party vote. Not surprisingly in California, regarded as a liberal state, the average of this measure is 53 percent for gubernatorial elections and 58 percent in presidential and senatorial contests.

Defining the Democratic side of a proposition is more complicated. For propositions, there exist two possible valid votes: yes and no. To determine whether yes or no represents the more liberal side, for each of the 91 propositions, we run regressions of the form:

(1) $yesvote_n = B_1(dem)_n + B_2(rep)_n + B_3(ind)_n + \mu_{yn}$ and

(2) $novote_n = B_4(dem)_n + B_5(rep)_n + B_6(ind)_n + \mu_{nn}$,

where *n* indexes neighborhoods (tracts). *yesvote (novote)* is the share of the tract voting yes (no) and *dem (rep/ind*[15]*)* is the percent of registered voters who are registered Democrats (Republicans/Other or Independent). The means of these variables are .49, .34 and.19 respectively. We then calculate the relative propensity of Democrats to vote yes on the measure as:

[15] Independent includes those who are registered unaffiliated and those who affiliate with a party other than Democrat or Republican. As of December 2007, eighty-three percent of registered Californians who are not registered for a major party are registered as "Declined to State", California's term for Independents. http://www.ballot-access.org/2007/12/24/new-california-registration-data-2/

(3) Relative Propensity = $\hat{B}_1 - \hat{B}_2 - (\hat{B}_4 - \hat{B}_5)$.[16]

A score of -2 would mean that in neighborhoods in which all registered voters are Republican all voters are predicted to vote yes and in neighborhoods in which all registered voters are Democrats all voters are predicted to vote no. A score of +2 would predict the reverse. A score of 0 would predict identical voting patterns in districts regardless of the party composition of its residents. While theoretically this relative propensity measure varies from -2 to 2, in practice the voting is not so lopsided. The measure ranges from -1.02 to 1.23 with a mean of .16 and a standard deviation of .44.

We check the validity of this measure in three ways. First, the Public Policy Institute of California surveys state residents about their political leanings and opinions. Fielded since 1998, the surveys have asked about fourteen of the propositions in our sample. The survey data allow us to calculate the relative propensity of those who claim to be Democrats to report voting yes. The correlation between the survey data measure and the aggregate data measure is .83. Second, there are official proponents and opponents for each of the propositions.[17] Using Internet resources we were able to

[16] We did not constrain our coefficients to lie between 0 and the share of the party who turned out (predicted in equations of the form of equation 1 substituting *turnout* for *yesvote*). Nonetheless, our predicted coefficients were quite well behaved. Of the 364 coefficients of interest, only 7 were predicted to be negative. In all cases percent Democrats (Republicans) voting yes plus percent Democrats (Republicans) voting no did not sum to more than a percentage point more than predicted Democratic (Republican) turnout.

[17] Under the California Elections Code, proponents and opponents of a proposition may submit to the Attorney General arguments for or against a proposition. These arguments are included in official ballot pamphlets and are signed by the individuals or groups that submit the arguments. Official sponsors are given the first opportunity to submit arguments in favor of a proposition. If the official sponsor does not submit an argument, the Secretary of State gives first priority to bona fide associations of citizens first (e.g. California Teachers Association) and second priority to individual voters. In selecting arguments against a proposition, the Secretary of State gives preference and priority in the following order: (1) legislative body, (2) member of a legislative body, (3) bona fide association of citizens, and (4) individual voters (Gerber and Phillips 2003). Typically, arguments for or against a proposition are prepared by the official sponsor or

collect party information for at least one proponent and one opponent for 50 of the propositions in our sample. (The difficulty in collecting this measure is that the official text of propositions, by design, does not reveal the political affiliation of proponents and opponents.) We use the party information to calculate the relative propensity of Democrats to support the yes side of the legislation. This measure correlates .52 (or .59 if we focus only on the 29 propositions in which our reference states the party of the individual explicitly[18]) with the relative propensity measure we create using the tract data. Finally, we follow the money. We examine the relative contributions of the Democratic and Republican parties to the yes and no sides of the 42 propositions to which either party contributed money. We find a correlation of .52 of this monetary support measure with our relative propensity measure. Thus, our measure seems a reasonable proxy of how liberal leaning a proposition is. We define voting Democratic on a proposition as voting yes (no) when this measure is greater (less) than zero. Our dichotomous classification yields 100 percent agreement with a dichotomous classification based on the PPIC survey data, 66-70 percent agreement with a classification based on official proponent/opponent party and 79 percent agreement with a classification based on official party donations. The average of the dichotomous variable is .45. Because of the greater possibility for misclassification amongst those propositions with a value of the continuous measure near 0, we demonstrate that our results are robust to excluding those propositions with a relative propensity of -.1 to .1.

Classifying our votes based on the voting outcomes for the same neighborhoods whose voting behavior we hope to predict may feel circular. However, our results are

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by vested interest groups such as the California Teachers Association, the California Taxpayer Protection Committee, the Nature Conservancy, the Howard Jarvis Taxpayers Association, etc.

[18] In the remainder we had to infer party from context.

robust to randomly choosing one half of the census tracts to classify the propositions and the other half to estimate the impact of employment conditions on voting behavior.

To familiarize the reader with our data, Table 2 demonstrates the relationship between our outcomes and tract level characteristics. We average Democratic voting for president, governor, senator and propositions across our sample years by tract. We then merge this collapsed data with 1990 census data and run regressions of Democratic voting on tract level demographics. As has been shown across a variety of countries, higher income predicts more conservative voting. This is true for all four types of contests. Tracts with more minorities (particularly Blacks) and those with more educated residents have a greater propensity to vote Democratic.

Appendix Table 1 shows the relationship between tract demographics and voting on proposition, by type. Interestingly, the sign of the income, minority and employment coefficients do not vary across proposition type.[19] The income-conservative voting gradient is the steepest for the redistributive categories: 1) social (welfare), which includes votes in the subcategories education, health, labor and welfare and 2) (taxation and) fiscal. Nonetheless income is a significant negative predictor of voting on the non-economic propositions.

The ability of the same demographics to predict conservative voting for candidates and proposition of various types is consistent with Branton (2003). While previous studies demonstrated that partisanship predicted voting across two or three unrelated propositions, Branton examines exit polls for 50 ballot propositions covering issues from economic to moral, across more than 20 states and three years. She finds that

[19] The one exception is the negative, insignificant other race coefficient in the regulation category.

partisanship (which is strongly predicted by demographics) predicts individuals' voting across the range of propositions.

Predicted employment index

We are interested in the relationship between voting and economic conditions. However we recognize the potential endogeneity of a neighborhood's economic conditions. Employment is a function of both labor demand and labor supply (effort, hours worked, industry employed in). The same characteristics which influence a person's decisions to work in a particular industry and live in a particular neighborhood may also influence his or her political preferences. We follow the procedure developed by Bartik (1991) and utilized by Blanchard and Katz (1992), Bound and Holzer (2000) and Autor and Duggan (2003) to create an index to isolate exogenous shocks to the demand for residents' human capital. The index, $\hat{\varepsilon}_{n,y}$ is calculated as:

(4) $\hat{\varepsilon}_{n,y} = \sum_k \varphi_{knY=0}\gamma_{ky}$

where φ is the share of the tract *n* employment in industry *k* in the initial year and γ is the log share of national employment in industry *k* in year *y*. The predicted employment index (PEI) predicts what tract level employment would be if industry composition remained fixed and industry level employment changes occurred uniformly across tracts. Tracts in which a large fraction of employees are working in declining (growing) industries will be predicted to have lower (greater) employment over time. Provided that national employment trends are uncorrelated with tract level supply response, this index isolates exogenous variation in demand for residents' human capital. To add to the likelihood that this condition holds, we follow Autor and Duggan (2003) and define γ as national employment excluding the state of California, thus excluding the labor supply

response of individuals in the focal tract and its labor market.[20] We calculate the index for all tracts located in California MSAs for the years 1990 to 2004. We restrict our attention to tracts which are located in MSAs because our national industry employment data do not contain information for the agricultural sector. Fewer than two percent of the approximately 7000 tracts in the state of California are not located in an MSA. Means for the index are shown in Table 1.

Because of the limitations of tract level employment industry data our employment data are coarser than what is available and has been used previously at the state level. Our employment data are grouped into 19 industries listed in the Data Appendix. Because of changes in the industrial classification system over time (also detailed in the Data Appendix) tract level employment data for the year 2000 are compatible with our national time series, but tract level employment data for 1990 are not. We do not use the 2000 tract industry employment data as our "initial" year because of the concern that industrial changes during the nineties influenced residential and industry sorting patterns of workers prior to the 2000 census. Instead, we use data from the 1990 (or 1980) decennial censuses to predict the share of employment in each identified industry in 2000. Specifically, for the sample of California metropolitan census tracts, the share employed in each of the 19 categories in 2000 is regressed on the share of employment in each of 17 (15) distinct industry categories available in the 1990 (1980) decennial census. We then use these regressions to predict tract level employment in each industry defined in 2000. That our results our robust to using either 1990 or 1980

[20] The magnitude of our results is robust to employing an index using California employment (excluding the focal tract's MSA) as γ. However, when we create the index including the metropolitan area in which the tract is located as γ, our magnitudes fall by half, providing evidence that despite the small size of a tract, employment in the tract's MSA cannot be considered exogenous to tract resident behavior.

industries as our anchor year lends confidence to the notion that our initial employment shares are not endogenous to industrial changes occurring in the 1990s. We further demonstrate that our results are robust to scaling the employment index by the percent of working age individuals in the tract in 1990. We perform the working age robustness check to ensure that results are not driven by those tracts in which the predicted employment index should have little power to predict economic health because few residents are of working age.

Previous work has demonstrated that the predicted employment index is correlated with state level employment and earnings (Blanchard and Katz., 1992 and Bound and Holzer, 2000). Ideally we would present evidence that the index is predictive of employment at finer levels of geography by showing a "first stage", a regression of employment on our index and tract and year dummies using our biennial tract level data. But as we have stated previously, tract level employment data are not available between censuses. Thus, we first show in Table 3 that the index is predictive of biennial employment at the county level and then demonstrate that the index predicts employment at the decennial frequency at the tract level. The first cell of Table 3 presents the coefficient on the predicted employment index from a county level regression of employment/population on $\hat{\varepsilon}_{n,y}$ and county and year fixed effects. A ten percent increase in the demand index increases the employment rate by over five percentage points. With our coarse industry employment data and a sample of only 37 metropolitan counties across eight years, this result is not significant. The second cell in column 1 demonstrates that the result is robust to using 1980 industries, in place of 1990 industries, as predictors for 2000 industry tract mix.

In order to compare our "first stage" across levels of geographies, in the next column we re-estimate the specification of column 1 with only two years of county data: 1990 and 2000, to correspond with our tract level census data. Across the ten years, a ten percent increase in the index leads to approximately a two to three percentage point increase in employment.

In the final columns of Table 3 we focus on the level of geography (but not level of frequency) of the data we will employ in our analysis. In column 3 we reestimate the specification of column 2 substituting tract for county data. Since the counties in column 2 are composed of the tracts in column 3, it is reassuring that our point estimates do not differ greatly between the two columns. We find in column 3 that a ten percent increase in the predicted employment index increases employment by about four percentage points. This result is robust to the addition of county*year fixed effects, as demonstrated in the final column of the table.

Estimation Procedure

Using our predicted employment index (PEI) and biennial voting data, we estimate an equation of the form:

(5) $\text{Outcome}_{e,,n} = \alpha + \pi(\hat{\varepsilon}_{n,y}) + \gamma_n + \delta_e + \chi_{cy} + u_{e,n.}$

where *e* indexes electoral contests (gubernatorial, presidential, senate or ballot contests), *c* indexes county, *n* indexes census tracts and *y* indexes years. *Outcome*, as outlined in a previous section, is tract level turnout, incumbency or Democratic vote share. γ and δ are vectors of tract and electoral fixed effects respectively. Finally, to hold labor market conditions fixed we control for χ, a vector of county*year effects. Previous papers have demonstrated that the index predicts long term changes in wages and employment

(Blanchard and Katz., 1992 and Bound and Holzer, 2000). Thus, we interpret π as the change in voting behavior induced by an exogenous shift in a neighborhood's *permanent* job security. To increase the precision of our estimates we weight observations by the voting age population in the year. Because of concerns of heteroskedasticity, autocorrelation and the lack of independence of our error term within tracts, we use robust standard errors clustered at the tract level.

In the ideal experiment, we could isolate the impact of economic conditions on voting by varying employment prospects while leaving other characteristics unchanged. We have no such ability to hold other characteristics fixed as individuals are free to sort across neighborhoods. In Appendix Table 2 we run regressions of the form of Table 3 column 4 to demonstrate the impact of the employment shock on various neighborhood characteristics pulled from the decennial censuses. Each cell presents the outcome variable and coefficient on the PEI from a different regression. Outcome variables are divided into two categories: 1) economic characteristics which combine the direct effects of the employment shock with the effects of neighborhood sorting and 2) demographic characteristics which reflect pure sorting.

In the economic characteristic column of the table, we show that across the full sample PEI predicts no significant change in income[21] over the ten year period. This result masks considerable heterogeneity by neighborhood's initial income, despite relative homogeneity in the impact of PEI on employment across neighborhood type. Neighborhoods in the second and third quartile of poverty see increases in average household income resulting from an increase in PEI. While the poorest neighborhoods

[21] We use categorical income to calculate average household income. We multiply the share of households whose income falls within a bracket by the midpoint of the income bracket and sum across brackets.

see a sizeable decrease in income, most likely due to sorting. The most well off tracts see no change in income resulting from the employment shocks.

As for demographic characteristics, positive shocks to the value of residents' human capital result in population loss and an increasing share of newcomers. Hispanics and foreigners comprise a smaller fraction of the population as PEI increases. Other minorities and college educated individuals make up a larger fraction. Given the decennial data these results likely overstate the short run changes in neighborhood characteristics that result from shocks to the value of resident's human capital. Nonetheless, combining the results of Appendix Table 2 and those of Table 2 showing demographic groups' propensities' to vote liberally suggests that the selection that results from our employment shocks moves a relatively larger number of Democratic voters into communities experiencing positive shocks. We will discuss the potential of selection bias further. We first detail our findings that positive economic circumstances generally result in more conservative voting behavior.

III. RESULTS

Candidate Choice

We begin our analysis of the causal impact of economic circumstances on voting behavior by examining the more familiar outcomes related to candidate choice. Specifically, in Table 4, we show the relationship between the predicted employment index and turnout, vote share for the incumbent and vote share for the Democrat in gubernatorial, presidential and senatorial elections. Each cell in the table presents the coefficient on the predicted employment index from a different specification of the form of equation 5. The -.380 in the first cell indicates that as the neighborhood's predicted

employment index score increases by 10 percent, the fraction of eligible voters who participate in the gubernatorial election decreases by nearly four percentage points. Scaling that coefficient using the decennial relationship between PEI and employment shown in Table 3, the coefficient indicates that a one percentage point increase in employment decreases gubernatorial turnout by approximately .9 percentage points.[22] The impact of employment on turnout in presidential and senatorial elections is also negative but about half the magnitude of the impact on gubernatorial elections. The second-row cells in each panel present robustness checks in which we vary the calculation of the predicted employment index, from 1990 to 1980 industry composition weights. All turnout results are robust to this change. Residents of neighborhoods that are losing economically are more likely to turn out. This finding is consistent with Hastings et. al. (2007) who demonstrate that losing the school choice lottery increases the likelihood that White parents vote in the proximate school board election.

In the second column of the table we examine how economic circumstances impact the vote share cast for the incumbent party in the gubernatorial and presidential elections respectively. Our gubernatorial results indicate that an increase to the value of residents' human capital decreases support for the incumbent, however the result is not robust as the coefficient falls by more than half in moving from the 1990 to 1980 weights. Our presidential specifications show that an increase in employment of one percentage point increases incumbent vote share by about one percentage point. This is consistent with a large literature that employs both time series and cross sectional micro data to show that willingness to vote for the presidential incumbent's party is increasing

[22] The average within tract change in percent employed 1990 to 2000 is approximately -4 percentage points or a little under -1 percentage point biennially.

in economic prosperity. (See Fiorana, 1978, for a review of the time series macro data literature. Fiorana, 1978 and Markus, 1988, are examples of the micro data approach.) In our five senatorial contests the incumbent candidate and the Democratic candidate are one and the same. Thus our senatorial results are uninformative as to the boost an incumbent candidate receives from positive economic shocks.

In the final column of Table 4, we demonstrate the impact of shocks to the value of human capital on party voting by type of contest. We find that a one percentage point increase in employment *decreases* the fraction of residents voting for the Democratic gubernatorial candidate by over one percentage point but *increases* the fraction of residents voting for the Democratic presidential candidate by approximately .2 percentage points. For senatorial elections, we find that a one percentage point increase in employment decreases the fraction of residents voting for the Democratic senatorial candidate by approximately two percentage points. If we apply prior literature on the impact of economic conditions on incumbent vote share to sign the effect of economics on senatorial incumbents as positive, we can then interpret our negative senatorial results (which confound party and incumbency) as evidence that positive economic conditions hurt Democratic senatorial candidates. As economic circumstances improve, residents' propensity to vote liberally decreases, say our gubernatorial and senatorial results. In the presidential contests, however, we find that employment shocks have a small positive effect on propensity to vote liberally. Although senators and presidents both focus on national issues we find that the impact of economic conditions has divergent effects on their vote shares as incumbents. Thus, our results point to a potential danger of inferring party preference from candidate vote choice.

Ballot Propositions

In Table 5 we turn to our 91 ballot propositions to understand if and how the impact of economic circumstances varies by issue area. As a baseline, we pool all ballot propositions and find that as a neighborhood's predicted employment index value increases by 10 percent, the fraction of voters choosing the Democratic side on the average proposition decreases by 4.5 percentage points. (See the first column of the table.) Scaling that coefficient using the results of Table 3 suggests that an increase in employment of one percentage point increases conservative voting by 1.1 percentage points. Alternatively, because of the abundance of propositions in our sample we can rerun the ballot proposition regression using only the decennial data so that in scaling our numerator and denominator reflect the same time horizon. The decennial proposition equation yields a coefficient of -.359 implying that an increase in employment of one percentage point increases conservative voting by .9 percentage points.[23]

In the second column of the table we ask how the column 1 results vary by issue. We divide propositions into seven categories. The first two types we consider to be the most redistributive: 1) taxation and fiscal policy and 2) social welfare, which includes votes in the subcategories education, health, labor and welfare. While education and health spending might be more readily thought of as public goods, Besley and Coate (1991) note that as long as the quality of the public good is not too high, some households will choose not to consume the public good, and thus public good provision will in fact be redistributive. The remaining categories are: 3) election, which includes campaigns,

[23] The scaled coefficient is larger in magnitude than the coefficient on employment in a simple decennial regression of proposition voting on employment on tract and county*year fixed effects, implying that the naïve regression is biased upward, or that an omitted variable increases both employment and liberal voting.

elections and public officials; 4) courts, which includes crime and crime adjudication; 5) government regulation, which includes energy, environment and miscellaneous regulations; 6) vices, which includes gambling, alcohol and drugs and 7) municipal and transportation. Recall that Appendix Table 1 showed that in the cross section the income-conservative voting gradient was less steep for these "non-economic" issues. The coding of the subcategories is based on "History of California Ballot Initiatives: 2002"[24] which lists citizens' initiatives by category. Appendix Table 3 lists all propositions by category.

We run a modified version of equation 5 in which we interact the predicted employment index with the seven categories of propositions. Results, shown in column 2, indicate that a ten percent increase in the index increases conservative voting on fiscal issues by 4.6 percentage points. The figure is 4.5 percentage points for social welfare issues. Thus, we provide evidence in support of the theory that positive employment shocks increase support for conservative redistribution policies.[25]

The remaining rows of the column demonstrate that the impact of economic conditions on voting expands beyond those purely economic issues, for which theory makes a prediction. In fact, the impact of the predicted employment index on the five remaining categories is of a similar magnitude: a ten percent increase in the index results in a four to five percentage point decrease in liberal voting on election, crime, regulatory,

[24] Available at http://www.sos.ca.gov/elections/init_history.pdf.
[25] We caution that this result should not be interpreted as saying that the demand for poverty alleviation is decreasing in economic conditions, but more narrowly that the demand for public provided poverty alleviation is decreasing in economic conditions. Households may well view public and private giving as substitutes. The charitable giving literature has shown that income increases private giving. (See for example Auten, Sieg and Clotfelter, 2002).

vice and municipal issues. Hence we provide evidence that conservative views on a wide variety of issues are increased by positive economic shocks.[26]

One explanation for the uniform impact of economic conditions on voting across categories is that issues in a variety of categories can have fiscal or redistributive consequences. For example Proposition 7 in 1998, which we coded as environmental, awards tax credits for reductions in air-emissions. We consider the possibility that bills with a fiscal impact in various categories are driving our uniform results. (We note, however, that the similarity of the election results to the fiscal and social results is hard to explain under this theory.) To investigate this possibility we recode ballots by whether their official summary, which appears on the ballot, explicitly mentions taxation[27] or the issuance of bonds. As the Proposition 7 example illustrates, these words are not simply proxies for vote category. While the fiscal category is the one whose bills most frequently mention taxes explicitly, vice is a close second. Social welfare ranks second to regulation in terms of frequency of the use of the word "bond" in legislation. (See Appendix Table 3 for a complete list of proposals and their tax/bond classification.) We once again modify equation 5 to include in addition to the predicted employment index main effect, the interaction of the index with an indicator for the word "tax" being mentioned in the bill summary and the interaction of the index with an indicator for the word "bond" being mentioned in the bill summary. A ten percent increase in the index results in a 4.4

[26] Concerned that heterogeneity of issues within issue groups could be driving our similar results across group, we examine the results when we limit consideration to public school bond measures which appear on the ballot in 1990, 1992, 1998 and 2002. Once again we see little difference between voting on a particular, in this case very narrowly defined, issue and voting on all propositions for the four years in question. The coefficients on the predicted employment index moves from -.777 when we focus on the four bond votes to -.711 when we enlarge focus to all propositions.

[27] In specifications shown, we code tax as 1 only when the tax refers to a personal or sales tax. Results are robust to including six additional bills (1992: 166, 1996:212, 1998: 11, 2004:1A, 68 and 70) focusing on taxation for lobbyists, casinos, employers and state/local tax sharing agreements.

percentage point decrease in liberal voting on bills that do not mention the word tax or bond explicitly, say the results of column 3. Note that the coefficient on the main effect is quite similar to that of the unmodified version of equation 5 which does not include tax/bond interactions. Furthermore, the impact of economic conditions does not differ substantively across bills that do and do not mention taxes or bonds specifically. The tax bill interaction is small, positive and insignificant. While the bond interaction is statistically significant, it is more than an order of magnitude smaller than the main effect.[28] Even when voters are cued to the redistributive nature of certain votes, there is little substantive difference in how economic conditions affect voting outcomes across vote types.[29] While not predicted by economic theory, this uniformity of impact is consistent with the political science literature demonstrating that partisanship predicts conservative voting across proposition type.

Robustness

The remaining columns of Table 5 demonstrate the robustness of the result. First, we address concerns about the predicted employment index. Columns 4-5 repeat columns 2-3, substituting 1980 weights, for 1990. Results are robust to this change. A second concern about the calculation of the predicted employment index is that the measure is relatively less informative about the economic health of those neighborhoods in which few residents are of working age. To ensure that our findings are driven by those

[28] Our finding that economic shocks affect voting on economic and non-economic issues consistently is robust to a third categorization. We code bills' economic relevance by how strongly income predicted their liberal vote share. We group bills into three categories: those for which the negative coefficient on income is above median value, those for which it is below and those for which income is a positive predictor of liberal vote share. (The final category includes 12 -13 of 91 propositions depending on whether we include other demographics in our prediction equations. But the positive coefficient is not robust. Only one proposition shows a positive relationship between income and voting, both with and without controls.)

[29] We have explored various functional forms for the predicted employment index and present the linear form because of its fit. For example the square of the index enters insignificantly. Positive and negative shocks produce effects that are similar in magnitude.

neighborhoods for which employment demand is most relevant, we scale our index using the fraction of residents in 1990 who were of working age, defined as 18-64. Reassuringly, coefficients shown in columns 6-7 increase in magnitude by about 50 percent. (The relationship between the scaled predicted employment index and realized employment is only about 30 percent larger and thus the implied relationship between conservative voting and employment is larger in this specification than in the basic specification.) A final concern about the index is that it may be correlated spatially. Because of the similarity of their residents' employment patterns, economic shocks may not be independent across tracts. To allow for dependence, we cluster our standard errors at the county, rather than the tract level. This is an extremely conservative correction given that we control in all specifications for county*year fixed effects and thus are identifying solely based on within county variation. Results are shown in columns 8 and 9. While our standard errors increase five or six fold, our results remain significant at conventional levels.

We are also concerned that because we classify a proposition as liberal or conservative based on the relative frequency of Democrats to vote yes on the proposition, there is far greater possibility of misclassification for propositions in which our relative propensity measure is close to zero. In columns 10-11 we demonstrate that our results are robust to restricting attention to the 78 of 91 propositions with relative propensity scores of greater than .1 in absolute value.

Finally, we are concerned that our results may simply reflect concurrent neighborhood trends in employment and conservatism. We explore this possibility in Appendix Table 4. For tractability, we collapse our data to tract/proposition type/year

cells where proposition type is either fiscal/social or not or tax/bond or not.[30] We then first difference the data by tract/proposition type and add tract level fixed effects to control for linear year tract trends. While the fiscal/social coding suggests a larger effect of employment shocks on fiscal/social votes than other votes when we move from the fixed effect to the first difference specification, the tax/bond continues to show consistent effects of employment shocks on votes of both types. For both codings, adding tract fixed effects to control for tract*year trends only serves to increase the magnitude of the impact of employment on conservative voting. Thus, Appendix Table 4 provides evidence that tract trends do not drive our results.[31]

Selection

We have found robust evidence that positive economic conditions affect neighborhoods' tendencies to vote conservatively. While the effect of economic conditions on a neighborhood is of inherent interest, particularly to the elected official who represents that area, we are also interested in how economic conditions affect individuals' political views and behaviors. (We assume, by revealed preference, that voting behavior reflects political views. Those who come out to vote conservatively have more conservative views on the issue than those who choose not to vote who have more conservative views than those who vote liberally.)

Because we rely on tract level data, our results may be driven by selection of individuals into and out of neighborhoods rather than by changes in individual political behavior. The concern is that a positive economic shock may draw relatively more

[30] We enlarge the groupings so that we have ballots of each type in each year.
[31] An additional concern was that our results were driven by one very politically connected industry which was growing because of employee voting behavior. However, our results are robust to sequentially dropping groups of tracts by largest industry.

conservatives into a neighborhood. For example, imagine that workers in industry A vote overwhelmingly Republican and that industry A then suffers massive job loss in year Y. Workers in industry A may then be forced to relocate in order to secure new employment. Even if no individuals altered their political behavior in response to the economic shock, the movement of A's workers would result in a positive correlation between economic conditions and Republican voting. This is a nontrivial issue given that in the year 2000 nineteen percent of residents in our sample tracts had moved into their residence within the past two years. A simple bounding exercise suggests that 100 percent of our findings could be due to such movement. However, when we examine the demographic change that occurs in response to an increase in the predicted employment index (Appendix Table 2) we find that on net we see an increase in predicted liberal voters, suggesting that selection is biasing our conservative voting findings toward zero.

In this section we provide evidence that our findings reflect changes in individuals' political views and behaviors, rather than simply residential movement in response to changing economic circumstances. We do so by examining two types of evidence: 1) characteristics of new registrants; and 2) the robustness of our results to controls for the changing characteristics of residents. We begin with the registration data. We have found generally that an increase in the index increases conservative voting. If the index also predicts an increase in Republican registration then this is evidence that selection may be driving our findings. (The increased Republican registration could also be the result of longer term residents registering for the first time or changing their affiliation.) On the other hand if the index decreases Republican registration then it seems unlikely that selection into the neighborhood is driving anything other than our

presidential party findings. In the first two columns of Table 6 we run models of the form of equation 5 in which our dependent variables are percent Democratic and percent Republican of those of voting age (row 1) and of those registered (row 2). We find that an increase in the predicted employment index leads to a small insignificant decrease in the share of the voting age population who is registered as Democrat and a much larger significant decrease in the share registered Republican. Thus, as we see in the second row of the table, a ten percentage point increase in our predicted employment index increases the Democratic share of the registered by 2.7 percentage points and decreases the Republican share of the registered by 2.2 percentage points. (The results imply a small decrease in share registered Independent.) Hence the Table 6 findings provide no evidence that our results, with the exception of presidential vote choice, are driven by selection. Rather, positive economic conditions increase conservative voting despite the relative decrease in Republican voters.

The final column of Table 6 shows the impact of the predicted employment index on total registration per voting age population. As implied by the other cells in the table, the index predicts a relative decrease in registration. In fact if we replace our Table 4 column 1 outcome of turnout/voting age population with turnout/registered we find no effect of employment demand on turnout/registered. Similar to the contentious Democratic Presidential primary of 2008, economic conditions appear to drive new voters to register and turn out. (Ball 2008; Chandler 2008; Ingram 2008; Kaplan 2008; MacKay and Parker 2008 and Smith and Reid 2008).

In Table 7 we continue to present evidence that our findings on turnout and vote choice are not driven by selection. Here we demonstrate that our results are robust to the

inclusion of covariates that control for the changing neighborhood demographic characteristics that result from the movement of individuals into and out of neighborhoods. The basic regressions are models of the form of equation 5, but employing only two years of data. Varying by electoral contest, these two years are chosen to be as close as possible to the years 1990 and 2000. We focus on the decennial years so that in our control regressions we can include as covariates the census demographic characteristics of percent Black, Latino, Asian, other race, foreign, elderly, under 17 and college graduate.

There are two limitations to the decennial focus for this exercise: 1) The decennial data force a long run comparison and thus answer the question of how long term changes in tract economic conditions affect voting rather than the question of how changes from mean tract economic conditions affect voting. To the extent that what drives selection in the long and short runs differs this exercise is uninformative about the direction of bias in our longer panel results. 2) The decennial focus forces us to discard some of our data years. However, we can examine whether data omissions are driving our results by employing a long run model in which we make use of all eight elections by stacking comparisons of 1990 and 1998, 1992 and 2000, 1994 and 2002 and 1996 and 2004. These results are shown in Appendix Table 5.

The decennial turnout results are shown in the first column of the table. Moving from the full sample to the decennial sample decreases by about two-thirds the magnitude of the presidential and senatorial results. Neither result remains significant. (We omit the gubernatorial analysis as we do not have 1990 turnout data for that contest.) Because households cannot relocate instantly, these longer run comparisons are more likely to be

subject to selection bias. It is noteworthy that selection seems to bias the turnout results in a positive direction, toward zero. The control rows demonstrate how the results change when we control for that selection as best we can with available data.[32] The presidential, senatorial and proposition results move in a more negative direction. Column 1, thus, presents evidence that controlling for selection results in a more negative relationship between turnout and economic conditions. The relationship between turnout and economic conditions appears to be the result, at least in part, of changes in individuals' political behavior, as opposed to their residential behavior.

In the second column of Table 7 we examine the robustness of our incumbent voting results to the inclusion of controls for selection. We first note that our presidential results are not robust to eliminating half of our data points. Both the gubernatorial and presidential basic results suggest positive economic shocks decreasing incumbent vote share. (We omit the senatorial results because of the perfect collinearity between incumbent and Democratic voting.) Moving from the basic to the control rows moves both of these results in a more positive direction, suggesting that selection is biasing us against finding a positive impact of economic conditions on incumbent vote share.

The decennial Democratic voting results (column 3) show a negative relationship between economic conditions and Democratic voting for gubernatorial and presidential candidates and proposition voting. (This change in sign for presidential elections is due to the absence of the 1996 and 2004 data and not simply to the forced long term comparison between 1992 and 2000. When we stack a comparison of 1992 and 2000, with a comparison of 1996 and 2004, the coefficient is .171, as shown in Appendix Table 5.

[32] The positive coefficient on the proposition turnout regression is an artifact of discarding the data, rather than the long run comparison, as demonstrated by the negative coefficient on proposition turnout in Appendix Table 5.

Nonetheless, the change in sign does indicate that the presidential conservative voting results are less robust than those for the gubernatorial and ballot contests.) In all three cases, the inclusion of covariates attenuates coefficients by only 20 percent.[33]

Our turnout, incumbent and Democratic voting results are robust to controls for selection. Thus, both this smaller sample control exercise as well as the an examination of eight elections worth of registration data provide evidence that our findings reflect attitudinal and behavioral changes on the part of individuals, and not simply selection into and out of neighborhoods.

Results by Tract Type

We have shown that positive economic conditions decrease liberal voting on redistributive and non redistributive ballot propositions. This could arise in one of two ways: The first possibility is a homogenous tract response. On average, voters in all tracts may increase conservative voting across all vote types in response to a positive economic shock. The second possibility is a heterogeneous tract response. Voters in some neighborhoods may increase conservative voting on some vote types, while voters in other neighborhoods increase conservative voting on other vote types, while voters in still other neighborhoods may not alter voting behavior at all in response to the same positive economic shock. We next examine the relative relevance of homogenous versus heterogeneous response by looking at Table 5 results by tract type. The caveat is of course that variation by tract type is only suggestive of variation by individual type. (For instance results in both majority Democratic and majority Republican tracts could be driven by Democratic voters.)

[33] Note that adding covariates to the employment regressions in Table 3 decreases the coefficient on the index by 64 percent. Thus the covariate results suggest a larger impact of employment on voting outcomes than implied by the basic regressions.

We first divide tracts by their political leanings. We label as "Democratic" tracts those that had more than the median fraction (.6) registered Democrats in 1990. We label the remainder as "Republican" tracts. We return to the basic model of equation 5 to examine how economic shocks affects proposition voting for these two groups. Voters in both Democratic and Republican tracts vote increasingly conservatively as tract economic conditions improve, results in Table 8 indicate. In order to scale results using data that are comparable in time frame, the second row of the table repeats the specification of row 1, but restricts the sample to only those propositions voted on during the 1990 and 2000 general elections. The final row replaces proposition voting with employment as the outcome of interest. Scaling the row 2 coefficients by those of row 3, we find that voters in Republican tracts increase conservative voting by 1.2 percentage points in response an increase in employment of one percentage point, while voters in Democratic neighborhoods increase their conservative voting by only .8 percentage points in response to the same change in predicted employment.

We next divide tracts into four categories based on their poverty level in 1990. As shown in the remainder of Table 8, point estimates indicate that across the four income categories voters' conservatism is increasing in economic conditions. The scaled point estimates indicate similar voting responses by the three lowest poverty tract types whose residents increase conservative voting by about one percentage point in response to an exogenous increase in employment of one percentage point. The response in high poverty tracts is half as large.

The results of Table 8 demonstrate that positive economic conditions increase conservative voting on propositions amongst residents of tracts of different political

leanings and income levels. We next ask whether the effect is driven by different types of propositions in different types of tracts. We pursue this question by running models of the form of Table 5 column 2, by tract type. The results are presented in Table 9 Panel A. The first column shows the results for tracts of below the median poverty level. (We divide results here by the median, rather than by quartile, for succinctness. The pattern of results is robust to dividing by quartiles.) A ten percent increase in the predicted employment index increases conservative voting by a significant 4 to 5 percentage points, depending on proposition type. Voters in neighborhoods above the median poverty level also increase conservative voting on all proposition types in response to an improvement in their local economic conditions. Coefficients of column 2 indicate that the increase is a significant 3 to 4 percentage points for every ten percent increase in the predicted employment index. Thus, economic conditions have a similar impact on voting outcomes across a wide variety of propositions for residents of both high and low poverty tracts. The same can be said of Republican (column 3) and Democratic (column 4) tracts. Voters in tracts of both political leanings increase conservative voting across vote type in response to an improvement in economic conditions. Point estimates vary only slightly across categories, hovering around a three percentage point decrease in liberal voting for those in relatively more Republican tracts and around a five percentage point decrease in liberal voting for those in more Democratic neighborhoods in response to a ten percent increase in the predicted employment index. Comparing estimates on the various interactions within tract shows us that employment shocks increase conservative voting across proposition type and across tract type. Panel B of Table 9 shows that we draw similar conclusions from coding the propositions by "tax" or "bond" mention. Thus,

Table 9 provides evidence in favor of a homogeneous response across tract type: voters in tracts of varying income levels and political leanings increase conservative voting in response to an improvement of economic conditions. Within tract type, the impact of economic conditions on conservatism is uniform across vote type. [34]

IV. DISCUSSION AND CONCLUSION

We have found evidence of the remarkable consistency of positive economic shocks to shift neighborhood residents' voting in a more conservative direction on a variety of state ballot issues. We show that positive employment shocks increase support for more conservative state ballot propositions concerning redistribution. More notably we find that economic conditions increase the tendency for residents' to vote conservatively on non-economic ballot issues. Not surprisingly, given our results on state ballot propositions, we also find that the propensity to vote for Republican gubernatorial candidates is increasing in economic conditions.

The one exception to our finding that improved economic conditions increase conservatism is presidential contests where we find a smaller (in magnitude), less robust increase in Democratic voting induced by positive employment shocks. This result points to the possible existence of a national issue on which liberal voting is increasing in economic conditions. While national issues are beyond the scope of the present paper which relies on state ballot initiatives as its primary data source, we hope in future work to examine the causal impact of economic conditions on support for additional policies.[35]

[34] The same holds true if we categorize tracts by education, race, or income heterogeneity.
[35] Examining this issue using a state level predicted employment index and outcomes from the National Election Studies and National Annenberg Election Survey resulted in extremely imprecise, unstable estimates.

Our results nonetheless show a remarkable consistency of economic conditions to move voting in a more conservative direction on a variety of state level issues. These findings are consistent with a growing literature in political science demonstrating the ability of party preference to predict voting on ballot issues across the spectrum. There is no inherent reason that those who hold conservative economic views should hold conservative social views. And in fact what we, in the United States, refer to as conservative social views, are often part of a platform that includes what we would refer to as liberal economic views, in European countries. Thus, apart from economic conditions having a direct impact on opinions concerning economic and non-economic issues, one less direct mechanism by which our results may arise is that economic conditions shift views on redistribution which shift party preference. Then party preference informs vote choice on issues across the spectrum.

And we do stress "informs" choice. While voters lean more on party cues when they lack information on the issue or candidate being voted on, our results do not appear to be driven by uninformed voters. One simple rule of thumb for determining party preference on a ballot issue is that a "no" vote is generally the more conservative vote. This is true for 63 of 91 sample propositions. Nonetheless, we find positive economic conditions predict more conservative voting regardless of whether the conservative side is "yes" or "no". Voters likely have more information on ballots for which more campaign dollars are spent. We find that economic conditions are a better predictor of conservative voting on those issues on which money is expended than on those issues on

which no campaign dollars are spent. The coefficient in a regression of voting liberally on PEI is -.479 in the former sample but falls in magnitude to -.085 in the latter.[36]

Thus our results indicate that economic conditions shift purposeful voting across a variety of issues. Consistent voting may stem from a desire to increase the strength of the preferred party. Alternatively, consistent voting could result from less rational motivations. Voters may choose their party based on one or two key issues and then infer their own preferences from the platform of that party. Consistent voting is facilitated by the California Republican and Democratic Parties, who are increasingly likely to take official party stances on ballot proposals and to contribute money to the proposition campaigns (Smith and Tolbert, 2001). The parties attempt to make partisan issues out of ballot propositions. Our results, demonstrating that positive economic conditions increase conservative voting on state level candidates as well as on economic and non-economic ballot propositions, suggest that the parties have been successful in their pursuit.

[36] There were no dollars spent on 19 of 91 votes.

DATA APPENDIX

Converting precinct to tract level voting data

For statewide elections that occurred between 1992 and 2000, the IGS matched precinct-level vote returns and voter registration information to 2000 census blocks and then aggregated the data to the 2000 census tract level.[37] For the 1990 general election, the IGS matched precinct-level vote returns and voter registration information to 1990 census blocks. Consequently, we use census block relationship files, provided by the U.S. Census Bureau, to aggregate the 1990 census block data to the 2000 census tract level. For all statewide elections occurring after 2000, the IGS only makes available precinct-level vote returns and voter registration information. However, the precinct level data can be aggregated to the 2000 census tract level using conversion files that the IGS makes available for each election. We use these election specific conversion files to convert all election results from 2002 forward to the 2000 census tract level.[38]

Obtaining an Inter-Geographic-Level Comparable Time Series on Employment

Our research design requires both industry data that describe the industrial composition of neighborhood residences at the census tract level at a fixed point in time and that describe changes in industry employment over time at the national and state levels. The United States Bureau of Labor Statistics (BLS) produces a comparable time series of national and state industry annual employment using the North American

[37] To match voting precincts to census blocks, the IGS used a straight proportional merge. In cases where voting precincts crossed the boundaries of census blocks, the IGS used the proportion of voters assigned to each census block as a weight to allocate vote returns to census blocks.

[38] The number and geographic composition of voting precincts changes from election to election. Thus, election specific "voting precinct to census block" conversion files are needed to match precinct level vote returns to 2000 census tracts.

Industry Classification System (NAICS) definitions. However, BLS does not provide the tract level industrial employment data we need.

The United States Census Bureau's decennial censuses provide the only information on industrial composition of resident workers down to the census tract level. A further complication is that because of the changes in industrial classification systems over time, the 2000 censuses rely on the NAICS classifications, but the 1980 and 1990 censuses are based on the previous classification system, The Standard Industrial Classification (SIC) system. Thus only the 2000 tract level industry codes match our 1990-2004 annual state and national employment data industry codes. Hence, in order to obtain a pre-period measure of tract level employment, we are forced to predict 2000 industrial employment shares using the 1990 (or 1980) industrial employment shares.

The industries identified in each year are identified in the following table:

	1980 tract (SIC codes)	1990 tract (SIC codes)	2000 tract (NAICS codes)	National annual data
Agriculture, Forestry and Fishery		√		
Agriculture, Forestry, Fishery and Mining	√			
Agriculture, Natural Resource and Mining			√	
Natural Resources and Mining				√
Mining		√		
Construction	√	√	√	√
Manufacturing			√	√
Manufacturing—nondurables	√	√		
Manufacturing—durables	√	√		
Wholesale Trade	√	√	√	√
Retail Trade	√	√	√	√
Transportation	√	√		
Transportation and Warehousing			√	√
Communication and Other Public Utility	√	√		
Utilities			√	√
Information			√	√
Finance and Insurance			√	√
Real Estate, and Rental and Leasing			√	√
Finance, Insurance and Real Estate	√	√		
Business and Repair Services	√	√		
Personal Services		√		
Personal Entertainment and Recreation Services	√			
Professional, Scientific and Technical Services			√	√
Management of Companies and Enterprises			√	√
Administrative and support and Waste Management Services			√	√
Educational Services	√	√	√	√
Health Care and Social Assistance			√	√
Health Services	√	√		
Entertainment and Recreation Services		√		
Arts, Entertainment and Recreation			√	√
Accommodation and Food Services			√	√
Other Professional and Related Services	√	√		
Other Services			√	√
Public Administration	√	√	√	√

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Table 1: Summary Statistics

	Gubernatorial Voting Panel (6777 tracts*4 elections=27,108)	Presidential Voting Panel (6777 tracts*4 elections=27,108)	Senatorial Voting Panel (6777 tracts*5 elections=33,885)	Ballot Propositions Voting Panel (6777tracts*91 propositions=616,707)
Dependent Variables				
Turnout	.33	.49	.44	.39
	(.16)	(.16)	(.18)	(.16)
	[20331]	[27108]	[33885]	[616707]
Voting for Incumbent (of two party voting)	.49	.50	.58	
	(.18)	(.19)	(.17)	
	[27096]	[27106]	[33882]	
Voting for Democrat/Democratic side	.53	.58	.58	.45
	(.18)	(.17)	(.17)	(.16)
	[27096]	[27106]	[33882]	[616516]
Independent Variables				
Predicted Employment Index, 1990 weights	-2.91	-2.91	-2.91	-2.91
	(.14)	(.14)	(.14)	(.14)
	[27076]	[27076]	[33845]	[615979]
Predicted Employment Index, 1980 weights	-2.91	-2.91	-2.91	-2.91
	(.13)	(.13)	(.13)	(.13)
	[27056]	[27056]	[33820]	[615524]
Years	1990, 1994, 1998, 2002	1992, 1996, 2000, 2004	1992, 1994, 1998, 2000, 2004	1990-2004

Notes: Means are weighted by tract voting age population. Voting for Democrat is fraction of two-party voting. Standard deviations are in parentheses and sample sizes are in brackets. Turnout can only be calculated for the Gubernatorial elections of 1994, 1998, and 2002 because total number of votes cast was not collected in 1990. All sample sizes exhibit minor variation within columns because of data availability.

Table 2: Descriptive Look at Tract Voting Patterns

		Democratic Voting for…			
Variable	Means	President	Governor	Senator	Propositions
Income ($10,000)	4.55	-3.45	-3.89	-3.29	-1.23
	(1.61)	(.02)	(.02)	(.24)	(.07)
Urban	.93	.07	.05	.06	.02
	(.22)	(.01)	(.01)	(.01)	(.00)
Black	.07	.70	.72	.69	.25
	(.13)	(.01)	(.01)	(.01)	(.00)
Asian	.09	.15	.29	.19	.07
	(.10)	(.02)	(.03)	(.02)	(.01)
Hispanic	.21	.35	.39	.33	.12
	(.19)	(.02)	(.02)	(.02)	(.04)
White	.63				
	(.26)				
Other race	.01	.46	.62	.50	.12
	(.01)	(.15)	(.17)	(.15)	(.04)
17 and under	.25	-.49	-.41	-.42	-.13
	(.08)	(.04)	(.04)	(.03)	(.01)
65 and over	.11	.09	.06	.09	.01
	(.08)	(.04)	(.04)	(.04)	(.01)
Foreign born	.19	.26	.17	.22	.09
	(.13)	(.03)	(.03)	(.03)	(.01)
College	.24	.39	.41	.40	.14
	(.16)	(.02)	(.02)	(.02)	(.01)
Employed	.63	.14	.13	.12	.04
	(.11)	(.04)	(.04)	(.03)	(.01)
Owner occupied	.59	.03	.04	.02	-.01
	(.23)	(.01)	(.01)	(.01)	(.00)
Ethnic heterogeneity	.42	-.03	-.09	-.06	-.02
	(.17)	(.01)	(.01)	(.01)	(.00)

Notes: Columns 3-6 present coefficient estimates resulting from regressing average Democratic voting for president, governor, senator and propositions across our sample years on 1990 census tract demographics. Column 2 contains the mean of tract demographics. In column 2 standard deviations in parentheses; in columns 3-6 standard errors in parentheses. The 1990 census tract variables are defined as percent of population, except in the case of owner occupied and income which are normalized by housing units, and ethnic heterogeneity which is defined, as in Alesina and La Ferrara (2000) as $1 - \sum_k s_k^2$ where k are the five racial groups and s is the share of the tract population who belong to the racial group. Regressions also control for percent poverty. The sample size for the regressions is 6769. Regressions weighted by tract voting age population.

Table 3: Relationship Between Predicted employment index and Employment

	Employment/population, metropolitan counties biannually, 1990-2004	Employment/population, metropolitan counties, 1990 and 2000	Employment/population, metropolitan census tracts, 1990 and 2000	Employment/population, metropolitan census tracts, 1990 and 2000
Predicted Employment Index, 1990 weights	.552 (.462) [296]	.16 (.234) [74]	.397 (.031) [13538]	.408 (.048) [13538]
Predicted Employment Index, 1980 weights	.556 (.436) [296]	.299 (.222) [74]	.399 (.031) [13528]	.389 (.048) [13528]
Mean (SD) Dependent Variable in Sample	.59 (.06)	.61 (.06)	.61 (.11)	.61 (.11)
County*year fixed effects	No	No	No	Yes

Notes: Each cell in the first two rows presents the estimated coefficient on the PEI from a different regression. All specifications control for county (or tract in columns 3-4) and year. Column 4 also includes county*year fixed effects. Sample size in brackets. Robust standard errors clustered by county (or tract in columns 3-4). Regressions weighted by voting age population.

Table 4: Impact of Changes in Predicted Employment on Candidate Choice

	Turnout	Voting for Incumbent	Voting for Democrat
Gubernatorial Elections			
Predicted employment index, 1990 weights	-.380	-.699	-.523
	(.111)	(.124)	(.034)
	{-.009}	{-.017}	{-.013}
	[20307]	[27064]	[27064]
Predicted employment index, 1980 weights	-.380	-.238	-.474
	(.108)	(.126)	(.036)
	{-.009}	{-.006}	{-.012}
	[20292]	[27045]	[27045]
Presidential Elections			
Predicted employment index, 1990 weights	-.142	.358	.099
	(.062)	(.053)	(.030)
	{-.003}	{.009}	{.002}
	[27076]	[27074]	[27074]
Predicted employment index, 1980 weights	-.182	.414	.098
	(.067)	(.053)	(.030)
	{-.004}	{.010}	{.002}
	[27056]	[27055]	[27055]
Senatorial Elections			
Predicted employment index, 1990 weights	-.185	-.803	-.803
	(.067)	(.033)	(.033)
	{-.005}	{-.020}	{-.020}
	[33845]	[33842]	[33842]
Predicted employment index, 1980 weights	-.184	-.840	-.840
	(.070)	(.033)	(.033)
	{-.005}	{-.021}	{-.021}
	[33820]	[33818]	[33818]

Notes: Each cell presents the estimated coefficient on the PEI from a different regression using a panel of metropolitan census tract voting returns. All specifications control for tract, year and county*year effects. Robust standard errors clustered by tract in parentheses. The figure immediately below the standard errors is the implied change in outcome that results from a one percentage point increase in employment. Sample size in brackets. Regressions weighted by tract voting age population.

Table 5: Impact of Changes in Predicted Employment on Voting Democratic, by Proposition Type

	Basic, 1990		1980 weights	EDI scaled by employment aged population	Cluster by county	Most partisan ballots	
PEI	-.450	-.444	-.444	-.660	-.444	-.528	
	(.012)	(.011)	(.011)	(.020)	(.061)	(.014)	
PEI*Tax		.001	-.001	-.015	.001	-.004	
		(.002)	(.002)	(.001)	(.007)	(.001)	
PEI*Bond		-.029	-.026	-.044	-.029	-.025	
		(.004)	(.005)	(.003)	(.020)	(.003)	
PEI*Fiscal	-.459	-.464	-.670	-.459	-.558		
	(.012)	(.012)	(.020)	(.062)	(.014)		
PEI*Social	-.447	-.441	-.704	-.447	-.528		
	(.012)	(.013)	(.020)	(.070)	(.014)		
PEI*Election	-.461	-.469	-.661	-.461	-.554		
	(.012)	(.012)	(.020)	(.062)	(.014)		
PEI*Court	-.465	-.466	-.670	-.465	-.548		
	(.011)	(.012)	(.020)	(.060)	(.014)		
PEI*Regulation	-.418	-.406	-.716	-.418	-.509		
	(.013)	(.013)	(.020)	(.086)	(.014)		
PEI*Vice	-.441	-.450	-.633	-.441	-.520		
	(.011)	(.012)	(.020)	(.050)	(.013)		
PEI*Municipal	-.445	-.453	-.676	-.445	-.521		
	(.012)	(.012)	(.020)	(.066)	(.014)		

Notes: Each column presents estimates from regressing proposition voting on the PEI and/or interactions between PEI and proposition type using a panel of metropolitan census tract voting returns. The PEI uses 1990 weights when not indicated. Sample size is 615788, except in columns 4-5 where it is 615362 and in columns 10-11 where it is 588715. Specifications control for tract, proposition and county*year effects. Robust standard errors clustered by tract when not indicated otherwise. Regressions weighted by tract voting age population.

Table 6: Impact of Changes in Predicted Employment on Tract Registration, Biennial Sample

Denominator	Democratic	Republican	Total
Voting Age Population	-.016	-.235	-.228
	(.030)	(.023)	(.070)
Total Registered	.266	-.224	
	(.058)	(.002)	

Notes: Each cell presents the estimates on the PEI for a different regression where the dependent variable is Democratic, Republican, or total registration as a share of voting age population in the first row and as a share of total registered voters in the second row. Each model is estimated with a panel of metropolitan census tract voting returns. All specifications control for tract and county*year effects. Sample size is 54152 in first row and 54146 in second. Robust standard errors clustered by tract. Regressions weighted by tract voting age population.

Table 7: Impact of Changes in Predicted Employment on Candidate and Ballot Item Choice, Decennial Sample

	Turnout	Voting for Incumbent	Voting for Democrat
Gubernatorial Elections			
Basic	NA	-.551	-.545
		(.144)	(.042)
		[13529]	[13529]
Controls	NA	-.136	-.444
		(.139)	(.043)
		[13529]	[13529]
Presidential Elections			
Basic	-.047	-.594	-.688
	(.098)	(.235)	(.045)
	[13538]	[13537]	[13537]
Controls	-.114	.106	-.563
	(.101)	(.235)	(.046)
	[13538]	[13537]	[13537]
Senatorial Elections			
Basic	-.061		
	(.095)		
	[13538]		
Controls	-.118		
	(.098)		
	[13538]		
Propositions			
Basic	.118		-.359
	(.049)		(.019)
	[121842]		[12715]
Controls	.02		-.292
	(.056)		(.017)
	[121842]		[121715]

Notes: Each cell presents the estimates on the PEI for a different regression estimated with metropolitan census tract voting returns. The first row in each panel estimates the basic model from Table 5, and the second row estimates a model that includes census tract demographics from the 1990 and 2000 decennial censuses. The gubernatorial elections focus on the years 1990 and 2002; the presidential and senatorial elections on the years 1992 and 2000; and the propositions on the years 1990 and 2000. All specifications control for tract, electoral contest and county*year effects. Sample size in brackets. Robust standard errors clustered by tract. Regressions weighted by tract voting age population. Controls include percent Black, Hispanic, foreign, elderly, under 17 and college graduate.

Table 8: Impact of Changes in Predicted Employment on Democratic Proposition Voting, By Tract Type

	Republican	Democrat	Low Poverty	Q2	Q3	High Poverty
	(.56)	(.98)	(.043)	(.08)	(.15)	(1.0)
	[.42]	[.36]	[.47]	[.41]	[.36]	[.30]
Biennial Data						
Proposition Voting	-.342	-.478	-.367	-.529	-.499	-.263
	(.017)	(.016)	(.025)	(.023)	(.021)	(.02)
	[307448]	[308340]	[153917]	[153922]	[154024]	[153926]
Decennial Data						
Proposition Voting	-.347	-.395	-.384	-.586	-.455	-.166
	(.027	(.027	(.049)	(.036)	(.034)	(.032)
	[60772]	[60943]	[30438]	[30434]	[30435]	[30436]
Employment	.289	.479	.362	.576	.492	.360
	(.077)	(.063)	(.216)	(.097)	(.084)	(.086)
	[6760]	[6778]	[3384]	[3384]	[3383]	[3386]
Change in Voting for One Percentage Point Change in Employment	-.012	-.008	-.011	-.010	-.009	-.005

Notes: Each cell presents the estimates on the PEI for a different regression. The models for proposition voting are estimated with a panel of metropolitan census tract voting data covering general election years (first row) and census years 1990 and 2000 (second row). The model for employment is estimated with a panel of metropolitan census tracts covering census years. The employment index uses 1990 weights. All specifications control for tract, proposition and county*year effects. Robust standard errors clustered by tract. Below headers in parentheses is maximum percent Democratic (poverty rate) in group and in brackets group average turnout for proposition contests. Regressions weighted by tract voting age population.

Table 9: Impact of Changes in Predicted Employment on Democratic Voting, by Proposition Type

	Poverty		Democratic Affiliation	
	Below Median	Above Median	Below Median	Above Median
Panel A				
PEI*Fiscal	-.446	-.389	-.344	-.489
	(.017)	(.015)	(.017)	(.016)
PEI*Social	-.498	-.347	-.339	-.477
	(.019)	(.016)	(.018)	(.017)
PEI*Election	-.469	-.388	-.370	-.477
	(.017)	(.015)	(.017)	(.016)
PEI*Court	-.458	-.393	-.357	-.489
	(.017)	(.015)	(.016)	(.016)
PEI*Regulation	-.472	-.315	-.296	-.449
	(.019)	(.016)	(.018)	(.018)
PEI*Vice	-.421	-.367	-.333	-.465
	(.017)	(.015)	(.017)	(.016)
PEI*Municipal	-.463	-.365	-.349	-.465
	(.017)	(.015)	(.017)	(.016)
Panel B				
PEI	-.442	-.369	-.336	-.47
	(.017)	(.015)	(.017)	(.016)
PEI*Tax	.001	.002	.011	-.005
	(.003)	(.002)	(.002)	(.002)
PEI*Bond	-.117	.01	-.043	-.025
	(.008)	(.005)	(.007)	(.005)
N	307389	307949	307448	308340

Notes: Each row in each panel presents the estimates from a different regression where the sample is a panel of selected metropolitan tracts (based on either poverty rates or Democratic voting) in general election years. The PEI uses 1990 weights. All specifications control for tract, proposition and county*year effects. Robust standard errors clustered by tract. Regressions weighted by tract voting age population.

Appendix Table 1: Descriptive Look at Tract Voting Patterns, Tract Voting Patterns by Proposition Type
Dependent Variable is Average (across the eight years) Democratic Voting

	Category of Propositions						
	Election	Courts	Social	Fiscal	Regulation	Vice	Municipal
Income	-.38	-1.26	-1.72	-1.67	-.65	-.71	-.63
($10,000)	(.04)	(.07)	(.10)	(.07)	(.01)	(.07)	(.01)
Urban	.01	-.00	.03	.02	.05	.02	.02
	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)
Black	.20	.20	.34	.25	.20	.21	.19
	(.00)	(.00)	(.01)	(.00)	(.00)	(.00)	(.00)
Asian	.01	.08	.13	.07	.01	.01	.06
	(.00)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)
Hispanic	.07	.09	.18	.07	.10	.10	.08
	(.00)	(.00)	(.01)	(.00)	(.01)	(.00)	(.00)
Other race	.05	.20	.19	.13	-.01	.08	-.01
	(.03)	(.06)	(.06)	(.04)	(.08)	(.05)	(.04)
17 and under	-.05	-.12	-.18	-.11	-.24	-.04	-.08
	(.01)	(.01)	(.02)	(.01)	(.01)	(.01)	(.01)
65 and over	.02	-.01	.02	-.01	.04	.04	.02
	(.01)	(.01)	(.02)	(.01)	(.02)	(.01)	(.01)
Foreign born	.09	.05	.10	.06	.15	.07	.07
	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)
College	.06	.10	.23	.13	.12	.04	.10
	(.00)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)
Employed	.03	.02	.06	.03	.10	.03	.03
	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)
Owner	.00	.01	-.02	.01	-.02	.00	-.01
occupied	(.00)	(.00)	(.01)	(.00)	(.00)	(.00)	(.00)
Ethnic	-.03	-.02	-.04	-.02	-.01	.01	-.01
heterogeneity	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)

Notes: Each column presents coefficient estimates resulting from regressing average Democratic voting for propositions of a specific type across our sample years on 1990 census tract demographics. Standard errors in parentheses. Independent variables come from 1990 census. Independent variables are defined as percent of population, except in the case of owner occupied and income which are normalized by housing units, and ethnic heterogeneity which is defined, as in Alesina and La Ferrara (2000) as $1 - \sum_k s_k^2$ where k are the five racial groups and s is the share of the tract population who belong to the racial group.

Regressions also control for percent poverty. Sample size is 6769. Regressions weighted by tract voting age population.

Appendix Table 2: Relationship Between Predicted Employment Index and Tract Characteristics

Economic Characteristics		Demographic Characteristics	
Average Income	-1215	Percent Black	.076
	(3955)		(.024)
--Bottom Quartile of Poverty Tracts	-7903	Percent Hispanic	-.547
	(16634)		(.056)
--Second Quartile of Poverty Tracts	38343	Percent Asian	.035
	(11518)		(.028)
--Third Quartile of Poverty Tracts	18560	Percent Other	.166
	(7786)		(.011)
--Highest Quartile of Poverty Tracts	-17703	Percent Foreign	-.237
	(5277)		(.044)
Percent Poverty	-.035	Percent College	.33
	(.037)		(.041)
Percent Owner Occupied	-.133	Percent Elderly	.01
	(.038)		(.022)
		Percent Under 18	.033
			(.024)
		Log Population	-.879
			(.152)
		Percent Moved in Last 10 Years	.209
			(.066)

Notes: Each cell presents the coefficient on the PEI (1990 weights) from a different regression where the dependent variable is an attribute of the census tract pulled from the 1990 and 2000 decennial censuses except for the last row under Demographic Characteristics where percent moved in 1990-2000 is regressed on the change in the employment index from 1990 to 2000. All specifications control for tract, year and county*year effects. Robust standard errors clustered by tract. Regressions weighted by voting age population.

Appendix Table 3: Propositions on California General Election Ballots, 1990-2004

Year	#	Description	Sub-Category	Politics	Outcome	Initiative	Bond	Tax
		Campaigns, Elections and Public Officials						
1996	208	Limits campaign contributions.	campaign reform	Republican	Passed	yes	no	no
1996	212	Repeals law limiting gifts and honoraria for public officials.	campaign reform	Democratic	Failed	yes	no	no
2000	34	Limits campaign contributions and loans to state candidates and parties.	campaign reform	Democratic	Passed	no	no	no
1990	131	Limits terms, gifts and behaviors of various statewide offices.	elected officials	Democratic	Failed	yes	no	no
1990	140	Term limits for various offices.	elected officials	Republican	Passed	yes	no	no
1992	164	Establishes congressional term limits.	elected officials	Republican	Passed	yes	no	no
2000	33	Allows legislatures to participate in the Public Employees' Retirement System.	elected officials	Democratic	Failed	no	no	no
~~1990~~	~~137~~	~~Requires voter approval for changes to initiative or referendum procedure.~~	~~elections~~		~~Failed~~	~~yes~~	~~no~~	~~no~~
1994	183	Allows longer between signatures and recall to consolidate elections.	elections	Republican	Passed	no	no	no
1998	3	Establishes partisan primary for president.	elections	Democratic	Failed	no	no	no
2002	52	Allows for election day registration.	elections	Democratic	Failed	yes	no	no
2004	60	Top vote getter from each party primary advances to general election.	elections	Democratic	Passed	no	no	no
2004	62	Establishes non-partisan primaries.	elections	Republican	Failed	yes	no	no
2004	59	Allows public access to meetings of government bodies.	public officials	Republican	Passed	no	no	no
		Courts						
~~1990~~	~~129~~	~~Funds for drug enforcement, treatment and gang related purposes.~~	~~courts~~		~~Failed~~	~~yes~~	~~yes~~	~~no~~
1990	139	Allows public entities, businesses and others to contract for inmate labor.	courts	Republican	Passed	yes	no	yes
~~1990~~	~~144~~	~~Construction to relieve overcrowding of state prisons.~~	~~courts~~		~~Failed~~	~~no~~	~~yes~~	~~no~~
~~1990~~	~~147~~	~~Funds for correctional facilities.~~	~~courts~~		~~Failed~~	~~no~~	~~yes~~	~~no~~
~~1990~~	~~150~~	~~Funds for physical infrastructure of county courthouses.~~	~~courts~~		~~Failed~~	~~no~~	~~yes~~	~~no~~
1994	184	Increases sentences felons with prior convictions.	courts	Republican	Passed	yes	no	no
1994	189	Adds felony sexual assault to crimes excepted from right to bail.	courts	Republican	Passed	no	no	no
1994	190	Transfers authority to discipline judges to commission.	courts	Republican	Passed	no	no	no
1994	191	Eliminates justice courts; elevates existing justice courts to municipal courts.	courts	Republican	Passed	no	no	no
1996	205	Funds for correctional facilities.	courts	Democratic	Failed	no	yes	no
1996	207	Prohibits restrictions on negotiation of attorneys' fees.	courts	Democratic	Failed	yes	no	no
1996	211	Prohibits restrictions on attorney-client fee arrangements.	courts	Democratic	Failed	yes	no	no
1996	213	Denies damage recover to felons whose injuries were caused during felony.	courts	Republican	Passed	yes	no	no
2000	36	Requires probation and drug treatment, not incarceration, for some drug crimes.	courts	Democratic	Passed	yes	no	no
2002	48	Amends constitution to delete outdated references to municipal courts.	courts	Republican	Passed	no	no	no
2004	64	Allows "unfair business" lawsuits only if actual loss suffered.	courts	Republican	Passed	yes	no	no
2004	66	Limits "three Strikes" Law to violent and/or serious felonies.	courts	Democratic	Failed	yes	no	no
2004	69	Requires collection of DNA samples from all felons and certain arrestees.	courts	Republican	Passed	yes	no	no

Appendix Table 3: Propositions on California General Election Ballots, 1990-2004 (continued)

Year	#	Description	Sub-Category	Politics	Outcome	Initiative	Bonc	Tax
		Social Welfare						
1990	143	Funds for physical infrastructure of colleges and universities.	education	Democratic	Failed	no	yes	no
1990	146	Funds for physical infrastructure for public schools.	education	Democratic	Passed	no	yes	no
1990	151	Funds for child care facilities.	education	Democratic	Failed	no	yes	no
1992	155	Funds for physical infrastructure for public schools.	education	Democratic	Passed	no	yes	no
1998	10	Creates commission for early childhood smoking prevention programs.	education	Democratic	Passed	yes	no	yes
1998	1A	Relieve public school overcrowding. Repair older schools.	education	Democratic	Passed	no	yes	no
1998	8	Creates permanent fund for reducing class size.	education	Democratic	Failed	yes	no	no
2000	38	Authorizes annual state per pupil payments to private/religious schools.	education	Republican	Failed	yes	no	no
2000	39	Bonds for repair or construction of school facilities.	education	Democratic	Passed	yes	yes	yes
2002	47	Relieve public school overcrowding. Repair older schools.	education	Democratic	Passed	no	yes	no
2002	49	Increases state grant funds for before/after school programs.	education	Democratic	Passed	yes	no	no
~~1990~~	~~124~~	~~Local hospital districts may own stock in health care related businesses.~~	~~health~~		~~Failed~~	~~no~~	~~no~~	~~no~~
1992	161	Allows for physician assisted death.	health	Democratic	Failed	yes	no	no
1994	186	Establishes state health insurance system	health	Democratic	Failed	yes	no	yes
1996	214	Prohibits health care business from denying care without examination.	health	Democratic	Failed	yes	no	no
1996	215	Legalizes marijuana for medical use.	health	Democratic	Passed	yes	no	no
1996	216	Imposes new taxes on health care businesses.	health	Democratic	Failed	yes	no	no
2004	61	Grants to children's hospitals for physical structural improvements.	health	Democratic	Passed	yes	yes	no
2004	63	Establishes 1% tax on income above $1 million for mental health services.	health	Democratic	Passed	yes	no	yes
2004	67	Increases telephone surcharge and allocates other funds for emergency services.	health	Democratic	Failed	yes	no	yes
2004	71	Establishes institute to regulate and fund stem cell research.	health	Democratic	Passed	yes	yes	no
1992	166	Requires employers to provide health care coverage for employees.	labor	Democratic	Failed	yes	no	no
1996	209	Prohibits public discrimination on race, sex, color, ethnicity or national origin.	labor	Republican	Passed	yes	no	no
1996	210	Increases the state minimum wage.	labor	Democratic	Passed	yes	no	no
2004	72	Requires health care coverage for employees.	labor	Democratic	Failed	yes	no	no
~~1990~~	~~142~~	~~Farm and home aid for veterans.~~	~~social welfare~~		~~Passed~~	~~no~~	~~yes~~	~~no~~
~~1990~~	~~145~~	~~Funds for first time home buyers and earthquake safety.~~	~~social welfare~~		~~Failed~~	~~no~~	~~yes~~	~~no~~
1992	162	Grants board of public employee retirement system investment authority.	social welfare	Democratic	Passed	yes	no	no
1992	165	Allows governor to declare "fiscal emergency" when budget not balanced.	social welfare	Republican	Failed	yes	no	no
1994	187	Makes illegal aliens ineligible for public social services.	social welfare	Republican	Passed	yes	no	no
1996	206	Farm and home aid for veterans.	social welfare	Democratic	Passed	no	yes	no
2000	32	Farm and home aid for veterans.	social welfare	Democratic	Passed	no	yes	no
2002	46	Provides housing assistance.	social welfare	Democratic	Passed	no	yes	no

Appendix Table 3: Propositions on California General Election Ballots, 1990-2004 (continued)

Year	#	Description	Sub-Category	Politics	Outcome	Initiative	Bonc	Tax
		Taxation and Fiscal Policy						
1992	158	Replaces Legislative Analysis with California Analyst.	fiscal	Democratic	Failed	no	no	no
1992	159	Establishes auditor general as a constitutional office.	fiscal	Democratic	Failed	no	no	no
1994	185	Increases tax on gas to go to transit and highway funds.	fiscal	Democratic	Failed	yes	no	yes
1998	11	Authorizes local governments to enter into sales tax revenue sharing by vote.	fiscal	Republican	Passed	no	no	no
2000	35	Eliminates restrictions on state, local, contracting.	fiscal	Republican	Passed	yes	no	no
2004	60A	Requires proceeds from surplus state property be used to pay off bonds.	fiscal	Republican	Passed	no	yes	no
~~1990~~	~~127~~	~~Excludes earthquake safety improvements from property tax assessment.~~	~~taxation~~		~~Passed~~	~~no~~	~~no~~	~~yes~~
1990	136	Regulations for property, special and general taxes.	taxation	Republican	Failed	yes	no	yes
1992	160	Allows property tax exemption for home of veteran killed in duty.	taxation	Democratic	Passed	no	no	yes
1992	163	Amends constitution to prohibit sales tax on exempt foods, adds exemptions.	taxation	Democratic	Passed	yes	no	yes
1992	167	Increases top state tax rates.	taxation	Democratic	Failed	yes	no	yes
1996	217	Increase top income bracket.	taxation	Democratic	Failed	yes	no	yes
1996	218	Requires vote to approve tax increase.	taxation	Republican	Passed	yes	no	yes
1998	1	Allows repair of contaminated structures without increasing tax value.	taxation	Republican	Passed	no	no	yes
2000	37	Requires 2/3 legislature vote to establish certain regulatory changes.	taxation	Republican	Failed	yes	no	yes
2004	65	Requires voter approval for reduction of local fee/tax revenues.	taxation	Democratic	Failed	yes	no	yes
1998	9	Regulates charges of electric companies.	energy	Democratic	Failed	yes	yes	no
		Government Regulation						
~~1990~~	~~135~~	~~Regulates pesticides.~~	~~environment~~		~~Failed~~	~~yes~~	~~no~~	~~no~~
~~1990~~	~~138~~	~~Funds for forestry projects and restoration.~~	~~environment~~		~~Failed~~	~~yes~~	~~yes~~	~~no~~
~~1990~~	~~141~~	~~Prohibits business from discharging carcinogens into water.~~	~~environment~~		~~Failed~~	~~yes~~	~~no~~	~~no~~
~~1990~~	~~148~~	~~Funds for water conservation.~~	~~environment~~		~~Failed~~	~~no~~	~~yes~~	~~no~~
~~1990~~	~~149~~	~~Funds for recreation, greenbelt, wildland, coastal, historic or museum purposes.~~	~~environment~~		~~Failed~~	~~no~~	~~yes~~	~~no~~
1996	204	Funds to ensure safe drinking water.	environment	Democratic	Passed	no	yes	no
1998	7	Awards state credits to encourage air-emissions reduction.	environment	Democratic	Failed	yes	no	yes
2002	50	Bonds for water and wetland projects.	environment	Democratic	Passed	yes	yes	no
1990	128	Regulates pesticides.	environnment		Failed	yes	yes	no
1990	130	Allows public acquisition of forests providing wildlife habitat.	environnment	Democratic	Failed	yes	yes	no
~~1990~~	~~132~~	~~Establishes marine protection zone.~~	~~environnment~~		~~Passed~~	~~yes~~	~~no~~	~~no~~
1994	188	Bans public smoking with significant exceptions.	government regula	Democratic	Failed	yes	no	no
1998	4	Prohibits trapping certain types of animals and use of certain methods.	government regula	Democratic	Passed	yes	no	no
1998	6	Prohibits sale/slaughter of horses for horsemeat for human consumption.	government regula	Democratic	Passed	yes	no	no

Appendix Table 3: Propositions on California General Election Ballots, 1990-2004 (continued)

Year	#	Description	Sub-Category	Politics	Outcome	Initiative	Bond	Tax
		Regulation of Vices						
1998	5	Specifies terms of mandatory compacts for Indian gambling casinos.	gambling	Democratic	Passed	yes	no	no
2004	68	Authorizes tribal gambling or non-tribal if tribes do not accept.	gambling	Democratic	Failed	yes	no	no
2004	70	Tribes entering state gambling compact would pay state based on gambling income.	gambling	Democratic	Failed	yes	no	no
1990	126	Adds alcohol beverage excise tax rates to constitution.	prohibition	Democratic	Failed	no	no	yes
~~1990~~	~~133~~	~~Establishes funds for drug education, treatment and enforcement.~~	~~prohibition~~		~~Failed~~	~~yes~~	~~no~~	~~yes~~
1990	134	Establishes alcohol surtax.	prohibition	Democratic	Failed	yes	no	yes
		Municipal and Transportation						
2004	1A	Ensures local property and sales tax revenues E179remain with local government.	municipal	Republican	Passed	no	no	no
~~1990~~	~~125~~	~~Allows motor vehicle fuel tax to be spent on railways.~~	~~transportation~~		~~Failed~~	~~no~~	~~no~~	~~no~~
1992	156	Funds for passenger rail.	transportation	Democratic	Failed	no	yes	no
1992	157	Leased toll roads shall be toll free at expiration of lease or after 35 years.	transportation	Democratic	Failed	no	no	yes
1994	181	Funds for passenger rail.	transportation	Democratic	Failed	no	yes	no
1998	2	Requires loans of transportation funds to repaid in the same fiscal year.	transportation	Republican	Passed	no	no	no
2002	51	Portion of state motor vehicle sales/lease revenues to transportation.	transportation	Democratic	Failed	yes	no	no

Notes: The rows that are struck out are the 18 1990 propositions that do not appear in our sample. Initiative indicates a proposition on the ballot by a citizen's initiative. Bond/tax indicate whether the proposition mentions bonds/taxes specifically.

Appendix Table 4: Impact of Changes in Predicted Employment on Democratic Voting, by Proposition Type, Controlling for Tract Trends

	Fixed Effects	First Difference	First Difference	Fixed Effects	First Difference	First Difference
PEI	-.544	-.249	-.297	-.525	-.575	-.781
	(.015)	(.023)	(.049)	(.014)	(.020)	(.049)
PEI*Fiscal/Social	-.004	-.507	-.507			
	(.003)	(.023)	(.034)			
PEI*Tax/Bond				.002	-.002	-.002
				(.003)	(.002)	(.000)
Tract Fixed Effects	yes	no	yes	yes	no	yes
N	108271	94727	94727	108271	94727	94727

Notes: Each column presents the parameter estimates on PEI and an interaction based on proposition type. All columns allow for tract specific intercepts by using either fixed effects or first differencing. The third and sixth columns combine first differencing with tract fixed effects to control for tract specific trends. Data are collapsed to tract/proposition type/year cells where proposition type is fiscal/social or not (columns 1-3) or tax/bond or not (columns 4-6). The PEI uses 1990 weights. Fixed effect columns include county*year and proposition type*year fixed effects. Robust standard errors clustered by tract. Regressions weighted by voting age population.

Appendix Table 5: Impact of Changes in Predicted Employment on Candidate and Proposition Choice, Stacked Eight Year Comparisons

	Turnout	Voting for Incumbent	Voting for Democrat
Gubernatorial Elections			
Basic	NA	-.531	-.575
		(.138)	(.042)
		[27064]	[27064]
Presidential Elections			
Basic	.041	.441	.171
	(.076)	(.068)	(.036)
	[27076]	[27074]	[27074]
Propositions			
Basic	-.232		-.388
	(.043)		(.012)
	[615979]		[615788]

Notes: Each cell presents the parameter estimates on the PEI for a panel of metropolitan census tracts for election type indicated. Specifications control for tract, county*year and tract*year effects where year dummies are eight year pairs (1990-1998, 1992-2000, 1994-2002, 1996-2004) so that parameters are identified by comparing changes that occur over an eight year time interval. The PEI uses 1990 weights. Robust standard errors clustered by tract. Regressions weighted by tract voting age population. We omit gubernatorial turnout because of the lack of 1990 data.