

Does Less Income Mean Less Representation?

Eric Brunner
Quinnipiac University

Stephen L. Ross
University of Connecticut

Ebonya Washington
Yale University and NBER

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We collect a novel dataset of matched legislative and constituent votes on 77 issues that allows for the first calculations of the extent to which legislative voting coincides with the majority view of low and high income constituents. We find that less income does not mean less representation. First, we show on most issues the opinions of high and low income voters are highly correlated and that the legislator's vote represents the views of both groups of voters in his district. Second, we show that what differences in representation by income do exist, vary by legislator party. Republicans more often vote the will of their higher income over their lower income constituents; Democratic legislators do the reverse. Third, we find no evidence that higher or lower income voters are more influential in the legislator's decision function. While the views of low (high) income voters are more predictive of Democratic (Republican) legislator's voting decisions after controlling for the party's ideology, the legislator's personal ideology and the median voters' view on the particular issue, income differences in representation are significantly attenuated by controls for the view of the legislator's same party constituents. Republicans (Democrats) vote like high (low) income voters, not because the voters are high (low) income, but because these constituents are partisans.

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“You see, the rich are different from you and me: they have more influence. It’s partly a matter of campaign contributions, but it’s also a matter of social pressure, since politicians spend a lot of time hanging out with the wealthy. So when the rich face the prospect of paying an extra 3 or 4 percent of their income in taxes, politicians feel their pain — feel it much more acutely, it’s clear, than they feel the pain of families who are losing their jobs, their houses, and their hopes.”

--Paul Krugman (2010)

Do politicians better represent the interests of their higher income constituents? Perhaps because of the increasing costs of campaigns, or the greater participation of high income citizens in the political process or because politicians more often hail from the higher classes themselves, the popular belief is that the answer is yes. In fact the idea that United States political institutions are less responsive to the needs of the poor has been postulated as a mechanism for the lower level of redistribution in the US compared to other developed countries. (See for example Alesina and Glaeser, 2004, and Persson and Tabellini, 2003). In this paper we present the first direct empirical evidence on whether less income means less representation in legislative voting.

Data limitations prevent our drawing inferences from previous work on this topic. Bartels (2008) regresses the DW Nominat score, a summary measure of the liberal/conservative leaning of a United States senator’s voting record, on the mean liberal/conservative leaning (seven point scale) of lower, middle and upper income survey respondents in the senator’s state. He finds that the ideology of the highest income group enters with a significantly larger coefficient than that of the lowest income group; he concludes higher income state residents are better represented than their lower income neighbors.

Bhatti and Erickson (2011) revisit Bartels’ analysis to address a weighting issue and sample size limitations. While in most specifications the authors find that the liberalness of upper income voters enters with a larger coefficient than that of lower income voters, the difference is

not statistically significant. In contrast to Bartels, these authors conclude that higher income constituents are not better represented than constituents with lower incomes.¹

Despite the innovations made by Bhatti and Erickson (2011) the limitation of both of these studies is their data. A constituent's view is represented in his or her legislator's vote when the legislator casts the vote that that individual would have cast, had that individual been in a position to do so. A group, such as the poor, is represented when the legislator casts the vote that the majority of the group would have cast. Thus to answer the question of whether the poor or the rich are better represented in terms of legislative voting, one needs three key variables, preferably for a variety of legislative votes: 1) whether the legislator voted yes or no; 2) whether the poor constituents wanted the legislator to vote yes or no; and 3) whether the wealthier constituents wanted the legislator to vote yes or no. As Matsusaka (2001) lays out in detail² the limitation of using proxy variables, such as liberal/conservative score, to stand in for an individual's vote choice, is that we lack the ability to map from that proxy to actual vote choice. Does a 3 on the 7 point liberal/conservative measure mean that the individual wants the legislator to vote in favor of extending affirmative action in granting government contracts? Does a score of 60 out of 100 on favoring increased abortion access mean that the individual wants the legislator to vote against increasing the waiting period for abortion access? Or do only those with scores above 70 favor a no vote? The problem becomes even more complicated when we allow for heterogeneity in respondents' views of the liberal/conservativeness of the status quo. If respondents who rate themselves 60 and 70 also rate current laws as 60 and 70 respectively then neither respondent would be looking for any law change.

¹ In addition to these two papers, there is a companion literature that takes the legislative body, rather than the individual legislator as the unit of observation, and runs similar regressions with legislative outcome on the left hand side and proxies for high and low income voter views on an issue on the right hand side. See for example Gilens (2008), Rigby and Wright (2011), Ura and Ellis (2008) and Wlezien and Soroka (2011).

² Erickson, Wright and McIver (1993) cover this point briefly.

Without knowledge of the function that transforms proxy measures into vote desires, the proxies cannot be used to measure legislative voting representation, overall or by income group. Thus previous work could not provide the most basic fact about representation by income group: On average, do legislators more often vote the desires of their higher income or their lower income representatives? As noted earlier, previous authors instead regressed legislative voting on the ideology of low and high income voters. Matsusaka (2001) criticizes the authors of studies of this vein for drawing conclusions about average representation of different groups (in this case low and high income voters) based on the coefficients obtained from regressions since the estimated slope can only tell us about representation on the margin, but not on average. The more insurmountable issue, however, is that because we are unable to map from liberal/conservative self ratings to desired voting outcomes, we cannot make inferences about representation on the true margin of interest: The marginal increase in a legislator's probability of voting yes on an issue predicted from a one unit increase in the fraction of the poor (wealthy) who want the legislator to vote yes on the issue.

We overcome the data limitation by turning to the state of California. Because of the state's extensive use of ballot initiatives we are able to identify 77 times over the years 1991-2008 during which state legislators and the public voted on the same proposal. For these 77 votes we have the three key variables (how each legislator voted, how residents of the poorest neighborhoods in each legislative district voted and how the residents of the wealthiest neighborhoods in each legislative district voted) necessary for a descriptive analysis of the relative representation of lower and higher income voters.

Using these data we present three findings about the relative representation of lower and higher income voters. First, we demonstrate that the majority of the time the legislator votes the

will of both lower and higher income voters. The legislative vote choice matches his/her constituents' vote choice about 75 percent of the time; this finding is true of constituents residing in both higher and lower income neighborhoods. Representation of both groups is only possible because the views of the two groups are highly correlated.

Second, we ask whether on average legislators' votes more often coincide with the views of their lower or higher income residents. We find that the answer differs by legislator party. Republicans vote the desires of their constituents living in the highest income neighborhoods more often than the desires of their constituents living in their district's lowest income areas. For Democratic legislators the pattern is reversed and more striking. Their voting behavior more often coincides with the voting patterns of constituents from the lower income parts of the district. Further Democratic legislatures more often vote the will of the lower income constituents than the will of the majority or median constituent. (For Republicans there is no significant difference between congruence with the highest income and congruence with the majority or median.) While the percentage of the time voting with the higher and lower income voters differs by only 3-5 percentage points for Democrats and Republican legislators respectively, for both parties, the differences are substantively significant in that they are similar in magnitude to differences in representation by constituent party. Further, for legislators of both parties the income representation pattern holds for taxation, an issue that puts higher and lower income voters at odds, and to times when, because of electoral pressures or the closeness of the vote, there is more at stake for the individual legislator. By comparing the votes of U.S. Senators to the views of constituents who responded to a unique survey on how respondents would have voted on issues that came before the senate, we present evidence that results are robust to moving away from the high income, high referenda use context of the state of California.

After establishing that Democrats are more likely to vote the will of lower income voters and Republicans the reverse, we ask whether there is any evidence that either income group actually has more influence than the other in their legislator's decision making. We examine in a regression framework whether the views of low income or high income voters better predict the legislator's vote. Compared to our findings on average representation, we find a similar pattern, but much larger income differences in representation on the margin. Holding constant the views of the lower income group, Republicans are 37 percentage points more likely to vote liberally when the majority of higher income voters desire a liberal vote. The figure is only 20 percentage points for lower income voters. Democratic voting, on the other hand, is better explained by the majority view of constituents of lower income neighborhoods over higher income neighborhoods with an increase in propensity to vote liberally of 30 and 12 percentage points respectively. Once again the difference in representation by income is similar in magnitude to the differences in representation by party. Results also continue to be robust to taxation and to votes that have greater stakes for the legislator. Further the greater propensity for the liberal votes of high (low) income voters to predict the liberal votes of Republican (Democratic) legislators remains after controlling for the legislator's party's propensity to vote liberally, the propensity for the legislator him/herself to vote liberally and the position taken by the district's median voter.

Why does Republican legislative voting better reflect the views of residents of higher income areas while Democratic legislators' votes better reflect the views of lower income residents? Clearly, the greater political participation of high income voters cannot explain the Democratic pattern; nor does it in fact explain the Republican pattern. Rather both the average and marginal differences in representation are attenuated substantially (reduced to less than 30% of original size) by the congruence between high income voters' views and Republican voters'

views and between low income voters' views and Democratic voters' views. Thus our results rather than providing evidence for the underrepresentation of the financially disadvantaged, serve instead to confirm previous findings of the underrepresentation of the politically disadvantaged, those voters who find themselves represented by a politician of the opposing party.

We present our findings in detail, after first detailing our data in the next session.

DATA

Sample of Issues

As noted in the introduction, previous work has been unable to answer the question of whether lower or higher income voters are better represented in legislative voting because of data limitations. In order to assess the relative degree to which the views of various constituencies are represented by their legislator's voting, we need data on legislative votes that includes three variables: 1) how the legislator voted; 2) how low income voters wanted the legislator to vote on the issue and 3) how high income voters wanted the legislator to vote on the issue. Clearly, while the legislator's vote is public record, knowing how the constituents would have voted had they been in a position to vote directly is more elusive. We turn to the state of California for our analysis because in California the constituents, through ballot propositions, were in such a position. Over the nine two-year legislative sessions that span the years 1991-2008³ we identify 77 times when the same issue was voted on by both representatives on the floor of the legislature and the public in either a general or primary election;⁴ (Sixty-six bills were voted on by both chambers; while eight were voted on by the lower house, the assembly, alone and three were voted on by the upper house, the senate, alone.)

³ Our sample period begins with the first congressional session whose electoral data are available in the Statewide Database and ends with the last session available at the time of data collection.

⁴ With the exception of measures that the public voted on in the 2002 and 2004 primary elections for which electronic data are not yet available.

Surveys occasionally ask respondents how they would vote on a particular measure under consideration by the legislature. In addition to the sheer abundance of issues for which we have data on both legislative roll call and public votes, there are two additional strengths of our matched data over survey data: 1) The number of individual opinions aggregated into district/income cells, is much larger⁵ than in a survey and thus the public vote is less prone to classical measurement error and 2) the match between the legislative vote and the public vote is quite precise (many times worded identically) so the public vote is likely a better measure of the public's desired outcome on the legislative vote than the response to a survey question which is often a very simplified version of a legislative issue.

Our 77 votes can be classified into two matching types: mandatory (56) and non-mandatory (21) matches. Mandatory matches occur when the legal process requires that voters vote on the same issue with the same wording that legislators voted on previously. In order to pass a bond act, to make a change to the constitution or to amend legislation passed in a statewide public referendum, both houses of the legislature must approve the measure by a 2/3 supermajority and the public must pass the measure by a simple majority. The second type of mandatory match happens when voters wish to overturn a law that has been passed by the legislature and signed into law by the governor. They do so by collecting signatures to get the measure placed on the electoral ballot and then having a simple majority vote to overturn. Non-mandatory matches, in contrast, are not stipulated by law. They generally arise because a group works to pass the same legislation through both ballot initiative and through the legislative process, either simultaneously or sequentially. Laws, that do not amend the constitution, can be passed through either public or legislative initiative. We identified these non-mandatory matches

⁵ Bhatti and Erickson (2011) have 150,000 individuals overall and 15,000 in California, we have approximately 150,000 (300,000) individuals 18 and over who cast a ballot on each of our issues in each assembly (senate) district.

by reading through the contents of legislation and ballot initiatives. For more details on how we chose our sample votes, please see the Data Appendix.

One potential criticism of our data is limited generalizeability. In order to measure public opinion on legislative votes, we limit our focus to legislation on which both legislators and the public cast ballots. This raises the concern that legislative voting on these pieces of legislation is not representative of California legislators' voting overall. However, we note that the threat of a law's being overturned by the public means that California legislators face the same incentive to align their votes with the desires of the public on legislation that is and is not eventually voted on by their constituents. In fact, Gerber (2006, 2009) and Matsusaka (2010) show that across a variety of issues, states that allow for public initiative (i.e., allow voters to propose and vote legislation into law) more frequently have laws that match the desires of the majority of the public than states that do not allow for public initiative.

That even the threat of direct democracy leads to greater congruence between public laws and public desires, suggests that our sample of votes is representative of California legislation as a whole, but raises the concern of generalizeability to other state legislatures. While we hope that the behavior of the legislators of the most populous state in our union is interesting in and of itself, we make a case for generalizeability by noting first that California legislators are not alone in being under the threat of direct democracy. According to the Initiative and Referendum Institute,⁶ in twenty other states voters can make use of both the initiative (propose and vote on their own law) and referendum (vote to repeal current law) processes. Six additional states allow only one of the two procedures. Secondly as to generalizeability beyond the direct democracy context, we note that while direct democracy may give a greater incentive to vote the will of the majority of voters, it does not provide an incentive to favor the wealthy over the poor, or vice

⁶ Website http://www.iandrinstitute.org/statewide_i%26r.htm accessed on April 7, 2011.

versa. The process also does not provide legislators with any additional information on voters' views, and certainly not differentially for one income group over another, as voters cast their ballots a median time of 187 days after their representatives. In both states with and without direct democracy (and in California on legislative bills with and without an accompanying public vote) legislators gather information on constituent opinion through direct communication with voters and through their own polling. Because California law requires a public vote on any bills that involve the issuance of bonds, our dataset includes votes on a wide variety of issues. Our matched votes cover a variety of issues including courts, education, elections, employment, energy, the environment, health, infrastructure and taxation—issues that are decided on by legislative bodies throughout the nation including the national congress. In fact we make use of a unique survey on respondents' preferred outcomes on issues voted on by the United States senate to present evidence that our results generalize away from the direct democracy context of the state of California.

In 74 of our 77 matched pairs, the legislator votes before the public. The timing raises the concern that a voter may be influenced in how to vote on a proposition by the legislative vote on that issue cast by his/her state representative. If that were the case then our measure of public opinion would not be a good proxy for public opinion before the legislative vote occurred. If low and high income voters were differentially influenced by the votes of their representatives, then our measure of the difference between low and high income representation would be biased by the difference in the degree to which these two groups copy the behavior of the representative. However, the idea that constituents vote according to the preferences of their legislators seems improbable for two reasons. First, constituents are unlikely to know how their state legislators

voted. The 2006 Cooperative Congressional Election Survey (CCES)⁷ asked respondents how their US senators voted on six high profile issues during the 2005-06 congressional session: stem cell research, Iraq withdrawal, immigration reform, minimum wage increase, capital gains tax increase and the Central American Free Trade Agreement. The average fraction correct was 49% which is clearly an upper bound for knowledge in our sample of less salient votes conducted by a political body that receives less media attention. Songer (1984) demonstrates that Oklahoma voters' knowledge of the policy positions of their state legislatures is less than half their knowledge of the positions of their federal representatives. In fact Hogan (2004) argues that because of voters' lack of knowledge about state politics, policy responsiveness is less important for the reelection of state legislators than for those at the federal level. Further, to the degree voters are knowledgeable about their state representatives' behavior that knowledge is increasing in income amongst both Democrats and Republicans and amongst constituents in both Democratic and Republican districts.⁸ Thus the pattern of our average representation results — Republican legislators' voting being more congruent with high income voters and Democratic legislator voting being more congruent with low income voters—seems unlikely to be driven by one income group's being more likely to copy the voting behavior of their representative. And while we have only three pairs in which the public voted first, we note that our congruence results are robust to a focus on these three vote pairs on which the public vote could not possibly have been influenced by their legislators' votes.

The second reason that it seems unlikely that constituents mimic the votes of their representatives is that when asked directly, California voters do not name their representative as being influential in their proposition voting. In a 1990 California Field Poll, reported on in

⁷ The data are available at <http://web.mit.edu/polisci/portl/cces/commoncontent.html>.

⁸ Authors calculations using the 2006 CCES.

Bowler and Donovan (1998), voters were asked in an open ended format what sources they turn to when deciding how they will vote on statewide ballot propositions. Their own representative was not amongst the top ten most frequently cited answers.⁹

A final caveat about our data source is that we capture only the views of those who actually cast a ballot. Just as with survey data, to the extent that the views of nonparticipants differ from political participants, our results speak only to the differential representation of political participants.

Legislative and Constituent Vote Matching and Coding

In order to address the question of whether legislative voting better represents the views of constituents from higher or lower income areas of the district, we collect data on legislative and constituent votes on each of the 77 issues. Vote choice (yes/no/abstention¹⁰) for each of the 80 assembly members and 40 senators who were in the legislature at the time of the vote was obtained from web sources and state archives, as detailed in the Data Appendix. Constituent vote choice on corresponding ballot issues at the census tract level, was obtained from The Statewide Database, maintained by the Institute of Governmental Studies (IGS) at the University of California at Berkeley.¹¹

For ease of interpretation and to be able to meaningfully add controls to our regression models of the legislative voting decision function, we recode both legislative and public votes from yes or no to liberal or conservative. We determine whether the yes or no side of each vote is

⁹ The top ten were ballot pamphlet (54%), newspaper editorials (47%), TV editorials (33%), friends (22%), TV ads (21%), direct-mail ads (20%), newspaper ads (18%), radio editorials (10%), radio ads (6%), and the League of Women Voters (2%). The ballot pamphlet gives pro/con views on the issue from noted politicians who are generally known statewide, but does not list the votes of the state legislators.

¹⁰ Abstentions include both absences and active abstentions.

¹¹ Located at <http://swdb.berkeley.edu/> The Statewide Database provides data on aggregate vote outcomes and voter registration for statewide primary and general elections held in California since 1990.

the liberal side by turning to the tract-level returns from the ballot initiative. For each public vote we run the following regression:

$$1) \quad \text{PercentYes} = B_1(\text{Percent Registered Democrats}) + B_2(\text{Percent Registered Republicans}) + \upsilon$$

where *PercentYes* is the percentage of yes votes among those voting on the initiative. We classify the yes side as the liberal side if $\hat{B}_1 > \hat{B}_2$ and the yes side as the conservative side if $\hat{B}_2 > \hat{B}_1$.¹²

We know from previous work that the views of the legislator and the constituency should be highly correlated.¹³ Thus, to verify the validity of both our vote coding (liberal/conservative) and our matching of voters to districts, Table 1 examines the relationship between a legislator's tendency to vote liberally on an issue and his or her constituent's desire for that legislator to vote liberally. We aggregate our data to the district/issue level and run models of the form:

$$2) \quad \text{Legislator_vote} = \gamma_0 + \gamma_1(\text{Constituency_vote}) + \varepsilon$$

where *Legislator_vote* is an indicator for whether the legislator voted liberally (or yes in the uncoded specification) and *Constituency_vote* is an indicator for whether the majority of voters in the district who voted on the corresponding ballot measure voted liberally (yes). We construct the *Constituency_vote* by aggregating tract level voting returns on the issue to the assembly/senate district as configured at the time the legislator voted on the measure.¹⁴

¹² We classify observations in which legislators abstain as missing. Largely because of abstentions and to a small degree because of vacancies we lose about 10 percent of our target sample of 8680. (80 assembly members * 74 votes + 40 senators * 69 votes = 8680). There are 809 abstentions and 58 votes missing due to vacancies. While we find that Democrats are more likely to abstain the more conservative their constituents are on the issue and Republicans are more likely to abstain the more liberal their constituents are on the issue, we find that representatives of both parties are less likely to abstain when there is an above median difference of opinion between low and high income areas in their district. Thus we do not believe that abstentions are systematically biasing our results.

¹³ For instance Snyder (1996) demonstrates this fact for California state legislators in an earlier time period.

¹⁴ Because of redistricting this may differ from the configuration of the districts when voters voted on the initiative.

The point estimate of 0.307 in the first column of Table 1 indicates that the likelihood that the legislator votes in favor of the legislation is 31 percentage points greater when the majority of the voting constituents favor a yes vote. The fit and precision of our model increases when we move from predicting yes votes to predicting more meaningful liberal votes. A majority of voting constituents in favor of a liberal vote is associated with a 53 percentage point increase in the likelihood that the legislator votes liberally on the issue. Our coding system is most likely to misclassify those bills that are the least partisan, those for which Democrats and Republicans vote similarly. Thus it is comforting that our results are robust to dropping more moderate bills, in particular the 13 bills for which $|\hat{\beta}_1 - \hat{\beta}_2| < 0.1$, as shown in column 3. One might also be concerned that legislative bills that we hand matched to ballot items are not as close a match of bill content as the mandatory ones. We demonstrate in column 4 that these hand matches are not driving our Table 1 findings; results are robust to their exclusion.¹⁵

As we noted earlier, the fact that constituents vote on average a half a year after their legislators may raise the concern that constituents' votes are influenced by those of their legislators. Such influence would invalidate our use of the constituent vote as a measure of constituents' desires on the issue at the time of the legislative vote. Therefore it is comforting that when we limit the sample to the three votes on which constituents could not have been influenced by the representatives' votes because constituents voted before the representatives (column 5) our results are not significantly changed.

In pairing legislators with voters one difficulty is redistricting. In what we refer to as redistricting years, legislators have been elected by one group of voters but are seeking reelection

¹⁵ The hand match sample also shows a positive significant relationship between legislative and constituent support. The coefficient is .370.

from another group.¹⁶ We always match legislators to the district and the voters who elected them.¹⁷ However, legislators may be more interested in aligning their votes with the views of those who will cast ballots on their reelection. Therefore it is interesting to see in column 6 that when we drop these redistricting years, the relationship between legislator and constituency support for the measure strengthens. In the final four columns of the table we show that this relationship between constituent and legislator support holds across parties and chambers.

Summary Statistics by Income Tercile

Table 1 demonstrates that constituent views overall are strongly correlated with legislative voting. Our current focus is on whether representation varies by constituent income. Thus rather than aggregating census tract voting data up to assembly/senate districts as in Table 1, we now move to aggregating census tracts to district income terciles to create variables on the political views of the lowest, middle and highest income voters, or more specifically the views of the voters residing in the lowest, middle and highest income neighborhoods, in each district. Income terciles are created based on average household income for the tracts within the district. (Non-census year income data is created based on linear interpolation at the tract level.) We weight by share of residents who are citizens aged 18 and over so that each tercile has an equal number of eligible voters, and therefore equal electoral power. The header row of Table 2 gives the mean minimum and maximum average household income for each tercile.

In the remainder of the table we provide summary statistics by income terciles. In Panel A of the table we calculate a variety of measures of political behavior in order to demonstrate

¹⁶ A term in the assembly is two years. Redistricting years for the assembly are 1991-1992 and 2001-2002. Senators serve for four years, but terms are staggered so half the senate terms expire in presidential years and half in the midterm. So for senators serving in even numbered districts redistricting years are 1991-1994 and 1999-2002 and for senators serving in odd numbered districts redistricting years are 1989-1992 and 2001-2004.

¹⁷ We match with the current district and not the future district because of the impossibility of knowing what district a legislator would have been assigned to next if s/he does not stand for reelection.

that relationships between income and political participation/view that the literature has identified previously hold in our dataset. We see that participation (as measured by registration, turnout for propositions or turnout for the highest office on the ballot) is increasing in income across all districts and within both Democratic and Republican led districts. We also find the well established correlation between income and conservatism:¹⁸ registration for the Republican Party is increasing in income; support for the Democratic Party in terms of registration and vote choice is decreasing in income, across all districts and within both Republican and Democratically led districts.

The variables in Panel A demonstrate that our California voters exhibit the patterns of political participation and preference by income generally found in the literature. However, they do not allow us to make statements about whether higher or lower income voters are better represented. Although previous studies have employed proxies for higher and lower income voter preferences, such as share registered Democratic, to describe the relative representation of these two groups, as Matsusaka (2001) notes such variables do not in fact allow for such inference. The issue is that we do not know the mapping from variables such as an indicator for a Democratic presidential vote or a seven point liberal/conservative scale or a five point pro choice/pro life scale to vote preference on any issue. While a score of 6 out of 7 on a conservatism scale tell us that the individual rates him/herself as fairly conservative, what the measure cannot tell us is how conservatively the individual rates the status quo policy. Without this second pieced of information, we do not know whether the individual would prefer for his/her representative to vote for the more liberal or the more conservative side of the issue.

To analyze to what extent a legislator represents (votes according to the wishes) of the constituency one must know both: 1) how the legislator voted and 2) how the constituency

¹⁸ See for example Brunner, Ross and Washington (in press) and Leigh (2005).

wanted the legislator to vote on the issue. Our matched legislative/constituent vote pairs provide this information for 77 issues. In Panel B we turn attention to these key variables. In the first row of the panel we show that on average in 60 percent of our legislator/issue observations the legislator votes the liberal side of the issue. This is not surprising when we note that Democrats are a majority in both bodies in each of our nine legislative sessions. Democratic legislators vote liberally 74 percent of the time; Republican legislators vote liberally 39 percent of the time. Overall and in both Democratic and Republican-led districts, constituents' propensity to vote liberally on an issue, like their propensity to vote for a more liberal candidate, is decreasing in income. However, we note that the income conservatism gradient is far less steep for issues than for candidates. Just as at the national level (Stimson, 2011), Table 2 shows that in the state of California, across income groups, party polarization is greater than issue polarization.

In the next row of Panel B we provide summary statistics on an indicator for whether the majority of the focal group favored the liberal view on the legislation. This variable is directly comparable in units to Legislator Voting Liberally, also an indicator variable. Comparing these two rows we see that voters residing in Democratic and Republican-led districts hold views that are much closer to each other than do Democratic and Republican legislators. Democratic legislators have a higher propensity to vote liberally than their constituents of any income category and Republican legislators have a lower propensity than their constituents, again regardless of income.¹⁹ Constituents' votes are far less polarized than their legislatures.

Despite the difference in polarization, legislators more often than not vote the will of the majority of their constituents. In this final row of Panel B we calculate what political scientists term congruence, an indicator that varies by legislator/issue for whether the vote of the legislator

¹⁹ Ansolabehere and Jones (2010) find the same phenomenon on the national level; US Senators are more polarized than their constituents.

matches the vote of the majority of his/her constituents which because of the binary nature of the vote choice also indicates whether the vote coincides with the will of the median voter. We use the congruence measure to determine how frequently legislators vote the will of their constituents or what we term average representation. We see in the first cell of the row that legislators vote the will of the majority/median 76 percent of the time, far more often than the 50% that would be expected if legislative voting were random with respect to the median voters' views. We examine whether representation differs by income group on average and on the margin in the results section.

RESULTS

In a representative democracy voters do not vote on each issue directly, but rather elect political leaders to make decision on legislation in their stead. Thus for legislative voting we define representation as the extent to which the legislator votes in the manner that the constituency would have voted had the constituency been in a position to do so directly. For our 77 matched pairs the constituents did have the opportunity to do so. We use these data to answer two questions about the relative representation of lower and higher income voters. First, do legislators on average vote the will of their higher or lower income constituents more on average? And secondly, do legislators vote the will of their higher or lower income constituents on the margin or in other words is there evidence that lower or higher income voters have more influence on the legislator's decision making?

Average Representation

We begin by returning to the congruence measures to address the question of average representation. We saw in the final row of Table 2 that legislators vote the will of the majority of their constituents 76 percent of the time. Continuing to the right in that table, we see that this

figure varies little across income terciles. Legislators vote like their lower income residents 77 percent of the time and like their higher income residents 75 percent of the time. Even when we stratify by legislator party we see that the differences between congruence with residents of the district's highest and lowest income neighborhoods differs by only five percentage points for Democrats and three percentage points for Republicans.

The high level of congruent voting with both high and low income voters is the result of high congruence between the lower and higher income voters' views themselves. In fact the correlation between the whether the majority of low income voters and the majority of high income voters prefer a liberal vote is 0.81. This correlation is driven neither by the small size of the districts nor by great homogeneity in terms of district income. The correlation is similarly high for assembly and senate districts despite the fact that senate districts are twice as large. (The state senate districts are larger than the US House districts in the state.) The correlation is still high (0.77) when terciles are defined relative to state, rather than district income. The key is that the opinions of various constituency groups move together across issues. In fact the correlation in support for the liberal position is 0.76 across terciles defined by share of those registered who are registered for the Democratic Party.²⁰ Therefore, our first finding is that lower and higher income voters see similar levels of representation regardless of their legislator's party.

As to the issue of whether residents of the lower income neighborhoods receive significantly less representation than their higher income counterparts, Table 3 demonstrates that the answer depends on party. The table reports, by party, the mean congruence between the legislator and 1) voters in the lowest tercile 2) the median voter and 3) the highest income tercile. The Republican means provide support for the popular view that legislators more often represent the will of their higher income voters. Republican legislators' voting is congruent with the view

²⁰ The correlation is also 0.75 if terciles are defined based on Republican Party registration.

of the top income tercile 77 percent of the time, but congruent with the view of the bottom income tercile only 74 percent of the time. As noted in the table, the difference is statistically significant. To get a sense of the economic significance of these results, in Panel B of the table we calculate congruence measures by constituent party. For Republican (Democratic) legislators tercile 3 now represents the top third of neighborhoods in fraction Republican (Democratic) of total registrants. Consistent with Fiorina's (1977) dual constituency hypothesis which posits that legislative voting is more heavily influenced by their support constituency than their remaining constituents, we see that Republican legislators' voting is three percentage points more likely to be congruent with the view of the residents of the neighborhoods with the highest fraction of Republican voters over the neighborhoods with the lowest fraction of Republican voters. Given that the difference in Republican congruence with voters from higher and lower income neighborhoods is also three percentage points, we conclude that the differences in representation by tercile are both economically and statistically significant.

But we cannot conclude that residents of lower income neighborhoods receive less representation generally because for Democratic legislators the pattern is reversed. These legislators vote with the highest income tercile 74 percent of the time and with the lowest income tercile 79 percent of the time. Again, the difference remains statistically as well as economically significant, as it is more than one half of the difference in representation by constituent party. In fact, the results of table 3 indicate, Democratic legislatures vote the will of the residents of the lowest income neighborhoods more often than they vote the will of the majority of district residents, just as Democrats vote the will of their most Democratic neighborhoods significantly more than their median voter. (For Republicans there is no statistical difference between congruence with the highest income tercile and the median nor between congruence with the

highest Republican tercile and the median.) Thus the first line of Table 3 does not support the popular view that lower income voters receive less representation overall; in fact the party which lower income voters are more likely to choose, provides significantly more representation of these voters.

In order to interpret these differences in congruence by income as the average relative representation of residents of higher and lower income voters, we assume that our constituent view variables represent the views of the constituents at the time of the legislative vote and that those views are not influenced by the voting behavior of the legislator. As we stated in the data section, we assume this primarily because of the low level of knowledge that voters have of politician behavior, particularly state politician behavior. To the extent that voters are knowledgeable, knowledge is increasing in income which would serve to bias our tercile 3 congruence upward, a bias that could explain away the relative representation pattern we find for Republican legislators, but not for Democratic legislators. In the second row of the table we provide a formal test of this assumption. We calculate congruence measures only for those votes on which the public voted first. If our row 1 findings are driven by voters' desires to vote the will of their legislator rather than the other way around, then we would expect to see a smaller difference in congruence with the top and bottom terciles, particularly for Republican legislators. But in fact we observe larger difference in congruence for both Democratic and Republican legislators. And despite the dramatic decline in sample size, those differences remain statistically significant. Thus this test provides no evidence that our findings are driven by voters being influenced by the behavior of their legislators.

A second concern about our results is their generalizability. Our public opinion measures are drawn from voters' participation in direct democracy which Besley and Coate

(2008), Gerber (2006, 2009) and Matsusaka (2010) have shown alters legislators' incentives to represent the majority will. Since we are looking at relative representation within a district, the impacts of direct democracy on representation would only bias our results if direct democracy led to increased incentives to represent one income group over another. This does not seem likely. However, to address this issue we shift our focus from the California state legislature to the United States Senate. Pooling data from the 2006 and 2008 Cooperative Congressional Election Studies which asked respondents how they felt about 13 high profile congressional votes,²¹ we find that the patterns of congruence at the national level are similar to those we find in California. Democratic legislators vote the view of the majority of their state's lowest income residents 71 percent of the time and of their highest income residents only 57 percent of the time. For Republican senators the level of representation is much lower—these particular votes appear to have been cast largely along party lines— however the patterns remains that Republicans are a significant 12 percentage points more likely to vote according to the will of the majority of their state's highest income voters than their lowest.²² Thus the national analysis, shown in row 3 of Table 3, demonstrates that our findings generalize outside of the direct democracy context.

In the remaining rows of Table 3, we examine the robustness of our findings to different measures of income. One concern with mean income as a measure of economic well being is that income may be mechanically increasing in household size. In the fourth row of the table we demonstrate that our results are robust to terciles based on within district poverty, a measure that takes household size into account. For this specification we reverse the tercile definitions so that

²¹ The votes concern stem cell research (both 2006 and 2008), Iraq withdrawal, immigration reform, minimum wage increase (both 2006 and 2008), capital gains tax cut, CAFTA, overseas eavesdropping, public health insurance for children, housing assistance, the bank bailout and the extension of NAFTA.

²² Because of the gross categorical nature of the income variable, we cannot create equal sized terciles within each state. Instead we define low income as below \$40,000 and high income as \$80,000 and above and use the American Community Survey to create controls for the percent of state residents who fall into each of these income categories. We include these controls in our tests for the difference in means congruence between top and bottom terciles.

the highest poverty tercile is tercile 1 and the lowest is tercile 3 making results directly comparable to the other rows of the table. Results are robust to a change from income to poverty.

Thus far in the analysis, the cutoffs for high and low income terciles have varied within year across districts. In fact in the final year of our sample, 11% (16%) of low income terciles included tracts that had greater average household income than the mean (median) high income tercile. Using these relative income terciles, we have shown that Democratic legislators vote more like their low income constituents and Republicans vote more like their higher income constituents. But we may also want to know whether Democratic voting looks more like low income voters in an absolute sense. For the next row of the table we create terciles based on state income. Within a year the cut offs for low and high income are the same across all districts for these terciles.²³ Results are robust to a change from relative to absolute income terciles.

Not only are these state income terciles invariant across districts, they have a higher absolute difference in income between the top and bottom income groups. Thus the state income terciles speak to the additional concern that our relative first and third income terciles are not distinct enough from one another to pick up what might be large difference in representation of the very top and very bottom income groups. We address this concern again by dividing voters into quintiles rather than terciles. The difference in Democratic legislator congruence with the first over the fifth income tercile is one percentage point more than the tercile difference. The Republican difference in congruence remains unchanged to the second decimal place. Our results do not appear to be driven by the coarseness of our income terciles.

²³ The average range for the low (high) income state terciles in 2006 dollars is \$6,401-\$59,373 (82,911-\$454,934). Like with the national data, because these state income terciles do not include an equal number of voting eligibles we control for the fraction of the district population in each tercile in our tests of the difference of mean congruence between top and bottom tercile.

We have found evidence that Republican legislators more often vote the will of their higher income constituents and Democratic legislators more often vote the will of their lower income constituents. In the next two rows of the table we examine whether the pattern of our results is robust to the key issue that pits the rich against the poor: taxation. We define tax bills in two ways. First in our more subjective coding we identify, based on our reading of the legislation, six bills whose primary focus is on tax policy or bond issuance.²⁴ A good example of such a bill is AB83 in 1998 which proposed a change to the top marginal income tax bracket and a change to state and local tax revenue sharing. (For more details on our coding please see the Data Appendix.) Our second more expansive, and more objective coding measure categorizes issues as tax or non-tax based simply on whether the word “tax” or “bond” appears in the text of the final bill in a manner that indicates the bill concerns taxation.²⁵ We identify 38 tax issues in this fashion. A good example of bills that fall into the second category, but not the first would be our three education bond acts. Results are robust to either coding.

Results are also robust to bills which are higher stakes for the legislator. We define higher stakes in four ways: 1) An election year for the legislator’s seat when the legislator has not reached the term limit; 2) Not having hit the term limit; 3) Representing a district in which the legislator’s party does not comprise a majority of voters and 4) Close vote—those for which the outcome would change if one legislator changed his/her vote. For legislators of both parties, the pattern of results is robust to the four definitions. However, the significance between the

²⁴ In fact we divide the 77 bills into 14 issue categories. Seven of these categories have enough variation in legislator voting within both parties to estimate models of the form of equation 3. Of those 7, we find that the Republican results are robust to six and the Democratic results robust to 4. Thus the Democratic results, while robust across votes and within taxation, appear to be less robust as we take different cuts of the data. Unfortunately there are not enough votes per category to state this conclusively. However, the California legislature and population are likely to continue voting on the same issues. Thus the robustness of the results to bills from various issue areas is a subject for future research.

²⁵ For example we omit SCA 18 in the 1995-96 session because although the assembly floor analysis refers to “bond acts and other ballot measures,” this is the only mention of taxation in the bill.

difference in first and third tercile congruence for the Republican election year specification is .14. For the remaining specifications the difference is significant at the five percent level or better. For Democratic legislators we continue to see that their voting congruence with the lowest income tercile is significantly greater than their congruence with their median voter.

Marginal Representation

The results of Table 3 demonstrate that less income does not mean less representation on average. Republican legislators more often vote the will of their constituents living in high income areas; Democratic legislators do the reverse. While congruence measures tell us to what extent the voting of the legislature and the constituents' coincide, they do not provide any indication of the relative weight of the constituency in the legislator's decision function. Congruence measures cannot answer the question of whether high income voters have more influence than lower income. To answer that question, we model the legislator's decision function using linear probability models of the form:

$$3) \quad \text{Legislator_vote} = \delta_0 + \delta_1(\text{Constituency_vote_Top}) \\ + \delta_2(\text{Constituency_vote_Bottom}) + \omega$$

where an observation is a district/issue. *Legislator_vote* is an indicator for whether the legislator voted yes (or liberally when we run models using our coding of legislation as liberal or conservative). *Constituency_vote_Top* is an indicator for whether the majority of voters living in the top income areas voted liberally (or yes) on the issue. *Constituency_vote_Bottom* is the same variable calculated for residents of the lowest income tracts in the district.²⁶

Because our constituent vote variables represent constituent's actual preferred voting outcome on each issue, our coefficients are directly interpretable as the percentage increase in

²⁶Once again standard errors are clustered by legislator/chamber. Results are robust to probit specifications and to using continuous measures of the constituent voting variables.

the legislator's propensity to vote yes (liberally) when the majority of the top (bottom) income constituency prefers a vote of yes (liberal), holding constant the views of the bottom (top) income constituency. In terms of describing representation, this is a marked improvement over analysis employing proxies such as an average liberal/conservative self rating for the tercile which only allow the researcher to conclude that voters who rate themselves as more liberal are associated with legislator's who vote more liberally. From this proxy analysis we do not learn how well voters are represented because we don't know if the self-described liberals wanted the legislator to vote more liberally than status quo on any or all issues.

We begin by estimating equation 3 with no controls and no coding of votes as liberal or conservative. Instead we leave the votes of the legislators and the constituents in their original yes/no form. The .0607 in the first cell of Table 4 indicates that when the majority of the lowest income tercile prefers a yes vote the Republican legislator is six percentage points more likely to vote yes, holding the view of the top income tercile constant. The figure is 42 percentage point increase in the probability of a Republican voting yes when the majority of the top income tercile desires a yes vote. For Democrats we observe the reverse. These legislators are 22 percentage points more likely to vote yes when the majority of the bottom income tercile prefer a yes vote and are an insignificant -3 percentage points less likely to vote yes when the majority of the top income tercile prefers it. For both parties the difference between the coefficient on the top and bottom income tercile view is significant. Once again this finding is robust to taxation, high stakes votes, varying the income metric, and a move to the non direct democracy context of the US Senate.²⁷ (Please see Appendix Table 1 for these results.)

²⁷ Not surprisingly these regression results are less robust as sample size falls. Results are not robust to the Republican specification estimated off of the three votes when the public votes before the legislators or to the Democratic specification estimated off of the 6 subjective taxation votes. The Republican close vote specification (5

The pattern is robust to our coding, we demonstrate in column 2, in which we predict whether the legislator votes for the liberal side of the legislation, instead of whether or s/he votes yes.²⁸ This specification is more meaningful economically. For example the estimates of the constants .185 and .438 now tell us that when both their top and bottom income constituents prefer a conservative vote, Republicans have a 19 percent probability of voting liberally whereas the more liberal Democrats have a 44 percent probability of doing so. Moving to our independent variables, we find that Republican legislators are 36 percentage points more likely to vote liberally when the majority of their highest income tercile prefers a liberal vote *ceteris paribus*, but only 19 percentage points more likely to vote liberally when their lowest income tercile prefers that outcome. For Democratic legislatures the figures are a 40 percentage point association with the lower income tercile's view and a 12 percentage point association with the higher income tercile's view. The significant 17 and 28 percentage point absolute differences, for Republicans and Democrats respectively, between the coefficients on the bottom and top income terciles demonstrate just how large the differences in average representation would be if the top and bottom income groups always disagreed on their policy position. That we showed in Table 3 that absolute differences in average representation were 3-5 percentage points underlines the high frequency with which there is agreement across income groups on preferred policy. The difference between average and marginal representation results serves also to illustrate Matsusaka's (2001) warning on the danger of inferring average representation from coefficients from models of legislative voting decisions.

Republican legislative voting is better predicted by the views of their higher income constituents; for Democrats we find the reverse. Why? Clearly the results of Table 4 cannot be

votes) is robust in the pattern but not the significance of the results; p value = .15. Apart from these small sample specifications fails robustness on just one specification: the Democratic legislator party not a majority.

²⁸ Results are robust to excluding those votes that are coding system is most likely to misclassify.

interpreted causally. The views of high income voters may be more predictive because of their correlation with the Republican legislators' personal ideology. The views of lower income voters may be better represented on the margin because of their correlation with the median Democratic district resident's view. We now turn to the literature on the legislator's decision function to examine whether correlation of high or low income views with any of these previously identified decision factors can help us explain these income differences in marginal representation.

One of the most important, if not the most important, predictors of a legislator's voting decision is that legislator's party affiliation. (See for example Ansolabehere, Snyder and Stewart, 2001; Snyder and Groseclose, 2000; Lee, Moretti and Butler, 2004.) For this reason, we run our regressions separately for Republican and Democratic legislators allowing not only for heterogeneous treatment effects by party but also allowing in our coded specifications for our constant to control for the average ideological (liberal/conservative) position of the legislator's party. Thus we first note that our column 2 specifications rule out average party ideology as the explanation for our income differences in marginal representation.²⁹

Given that political participation is increasing in income in both Democratic and Republican led districts, one explanation that we can rule out is that our representation patterns are explained by political participation.³⁰ It is not surprising that in specification 3 of Table 4 that when we control for tercile turnout in the most recent general election, as well as the interaction of turnout with the tercile's liberal view indicator,³¹ we see that the difference between

²⁹ In contrast average party view does significantly attenuate our US senatorial results, reducing the significant difference in the high and low income coefficients in the Democratic legislator specifications completely; these results are not robust to the move to the coded specification.

³⁰ Greater political participation may mean that the voters have a greater opportunity to select a representative who is like minded; it may mean that the legislator is more aware of the group's policy desires; or it may mean that the group is more likely to punish the political for deviations from those desires. Griffan and Newman (2005) provide evidence that in the US Senate the views of voters are significantly better represented than the views of non-voters.

³¹ We also control for year fixed effects in this specification to account for year to year changes in average interest in the election.

Democratic representation of top and bottom tercile grow. The .605 coefficient predicts that if tercile 1 residents voted at the sample mean rate, that when they preferred a liberal policy position on an issue the Democratic legislator would be 61 percentage points more likely to vote the liberal position. More interestingly, the tercile 3 coefficient in the Republican specifications is not significantly attenuated by the addition of the turnout controls. Participation does not provide an explanation for why Democrats better represent the views of lower income residents nor even for why Republican legislators represent the views of higher income residents.³² The robustness to the inclusion of participation controls is further evidence that our findings are not driven by legislative voting influencing constituent views. Those who participate most are most knowledgeable; if their acting on this knowledge were driving results, results would be attenuated by the participation control.

Recent scholarship has argued that legislators in large part vote their personal views. Levitt (1996) showed that nearly half of the weight in a legislator's decision function is placed on his/her own ideology, as modeled by a fixed effect.³³ Thus one possibility explanation for our pattern of findings is that Republican (Democratic) legislator's voting is better explained by voters from high (low) income areas because these legislator's views happen to be more in line with voters from these particular areas. We test for this possibility by adding legislator (within chamber) fixed effects to our model. Results are robust to this addition; see specification four of Table 4. Even conditional on their own views, Republican legislators' voting is better explained by the views of high income voters and for Democratic legislators the reverse remains true.³⁴

³² Results are robust to measuring participation using share registered.

³³ See also Ansolabehere, Snder and Stewart (2001), Kau and Rubin (1979,1983), Poole and Rosenthal (1996) and Sndyder and Groseclose (2000) for evidence on personal ideology and voting.

³⁴ One concern about the legislator fixed effect specification is that legislators may have different ideological views on different issues. For example a legislator might be conservative on fiscal issues, but liberal on moral issues. Therefore we also run the legislator fixed effect specification using only the tax votes (objective coding). Results are robust to this change in sample.

The median voter theorem (Downs, 1957) makes the strong prediction that the preferences of this single voter receive 100% of the weight in the legislator's decision function. Empirically, however, there is evidence that the view of the average or median voter is one factor among many receiving positive weight in the decision function. (See for example Gerber and Lewis, 2004 and Levitt, 1996, and Stratman, 1995 and 1996.) Thus another possible explanation for the differential marginal representation of income groups is that in Republican led districts the higher income voter shares the views of the median voter while in Democratic led districts the lower income and the median view are more likely to coincide. In specification 5 of Table 4 we explore this possibility by adding an indicator for whether the majority of the district (which would include the median voter) voted the liberal side of the issue.³⁵ Coefficients on the top and bottom income tercile view are attenuated by this addition, demonstrating the correlation between the median view and the top as well as the bottom income tercile's view in Republican led districts and to a smaller extent in Democratic-led districts as well. The basic pattern of our results, however, remains unchanged. Conditional on both the legislator average ideological view and the median voter issue specific view, Republican legislative voting is better predicted by the view their high income constituents while Democratic legislative voting is better predicted by view of their lower income constituents.

Finally we investigate partisanship as an explanation. The dual constituency hypothesis (Fiorina, 1977) theorizes that the preferences of the legislator's support constituency (those who are most likely to vote for the legislator) weigh more heavily in the legislator's decision function than do the views of other district residents. Levitt (1996) estimates that same party constituents receive three to four times the weight in the legislator's decision function than constituents of the opposing party. More recently Mian, Sufi and Trebbi (2010) demonstrate that the mortgage

³⁵ We continue to include legislator fixed effects in the model.

default rate in the district's Republican neighborhoods better predicts Republican House members' votes on the American Housing Rescue and Foreclosure Prevention Act of 2008 than Democratic neighborhood default rates. Using our own data, we find empirical evidence for this hypothesis is robust to moving from proxies of constituent vote desires to data on actual voting desires that allow us to measure the true margin of interest: the association between a desired liberal vote and an actual liberal vote. In models of the form of equation 3 where we substitute constituent views by party terciles for income terciles, we find that the marginal increase in a Republican legislator's propensity to vote liberally is 36 percentage points when the most Republican neighborhoods desire a liberal vote *ceteris paribus*, but only 20 percentage points when the least Republican neighborhoods so desire. For Democrats, the difference is even greater: 44 percentage points for the lowest income neighborhoods and only 9 percentage points for the highest. For legislators of both parties, the difference in coefficients on top and bottom party terciles is statistically significant.

Given that constituent Republican affiliation is increasing in income, while constituent Democratic affiliation is decreasing in income, the dual constituency hypothesis provides a potential explanation for the robust pattern that Republican legislative voting better reflects the views of higher income voters and Democratic voting better reflects the views of lower income voters. In specification 6 of Table 4 we explore this potential explanation by adding an indicator for whether neighborhoods in the top tercile of share Republican (Democratic) registrants support the liberal side of the proposition. With the addition of this control, the difference between the coefficients on the top and bottom income tercile falls by 94% in the Republican specification. Controlling for support constituent views, the views of lower and higher income neighborhood voters are statistically equally predictive of a Republican legislator's voting. The

difference between the marginal representation of lower and higher income voters in the Democratic specifications shrinks by 66%, a smaller drop percentage-wise, but larger in absolute value. The difference remains statistically significant at only the 10 percent level. The pattern and significance level of results is robust to operationalizing support constituency based on votes for the legislator in his/her most recent election, rather than party registration. Thus the results of Table 4 indicate that Republican legislators appear more responsive to the views of their higher income district residents and Democrats to their lower income constituents, not because these voters are high or low income, but because these constituents are highly partisan.

Returning to our congruence results, we receive further confirmation of this conclusion. In Table 5 we reshape the data so that an observation is a legislator/issue/tercile allowing us to run the tests in regression form using a simple dummy for tercile. In the first specification of the table we replicate the congruence result of Table 3. The -.0233 in the first cell indicates that Republican legislators vote congruently with their lowest income voters a significant two percentage points less frequently than they vote congruently with their median voter. Comparing the coefficients on top and bottom income tercile we see, as in Table 3, that Republicans are a significant 2.5 percentage points more likely to vote congruently with residents of their most well-to-do neighborhoods than with those who reside in the least well of areas. Comparing the top and bottom tercile coefficients in the Democratic specification we see that Democrats vote with their bottom income tercile five percentage points more frequently than with their top income tercile and that their frequency of congruence with both income terciles is significantly different from their frequency of congruence with their median voter. In the second specification of the table we control for the congruence between the income tercile's view and the support constituency (neighborhoods in the top tercile of share registered Republican/Democrat) view.

The .318 coefficient on the tercile-party congruence dummy in the Republican specification indicates that when the income tercile's view is the same as the support constituency's view the Republican legislator is 32 percentage points more likely to vote the view of that particular income group. For Democrats the figure is 60 percentage points more likely. And for legislators of both parties, the addition of the support constituency control, explains the vast majority of the difference in representation of the highest and lowest income groups. For Republicans the addition of the control closes the gap completely; in fact the coefficient on top income tercile is now slightly smaller than on bottom income tercile. For Democrats the gap falls by 75 percent. The results of Tables 5 and 6 rather than providing empirical support for the underrepresentation of the financially disadvantaged, serve instead to confirm previous findings of the underrepresentation of the politically disadvantaged, those voters on the losing end of the legislative election, who find themselves represented by a politician of the opposing party.

CONCLUSION

Contrary to popular view, we find no evidence that less income means less representation. Analyzing the voting behavior of state legislators on 77 proposals on which both the legislature and the public cast ballots, we find first that the opinions of higher and lower income voters within a district are highly correlated and thus it is impossible to represent the views of one group and not also represent the views of the other. What differences there are in average representation do not result in lower income voters' consistent disadvantaged. While Republican legislators more frequently vote congruently with the view of their highest income constituents, Democrats are more likely to vote the view of their lowest income constituents. In fact Democrats vote the lower income view more often than the median view. In terms of relative weight in the legislator's decision function, we show that controlling for the legislator's

party's ideology, the legislator's personal ideology, the median voters' view on the issue and differences in political participation of lower and higher income voters, Republican legislative voting is better predicting by their higher income voters and for Democratic legislators the predictive value of the views of the lower income voters is significantly greater.

Differences in representation by constituent income, on average and on the margin, are, however, significantly attenuated by controls for the congruence between the income tercile's view and the party view. In other words, Republicans are more likely to vote the higher income viewpoint because the higher income constituent viewpoint is often the Republican constituent viewpoint and Democrats are more likely to vote the lower income viewpoint because that more often coincides with the viewpoint of Democratic constituents. Thus rather than finding evidence to support the contention that representation is increasing in income, we find instead, as predicted by the dual constituency hypothesis, that representation is increasing in partisanship, namely in voter affiliation with the legislator's party.

We note that our results are descriptive and cannot be interpreted causally. The legislative vote and the same party constituent vote may coincide because the legislator is following the constituents' lead or because the same party constituents choose a candidate whose views they share. What is clear from is that our findings on representation and constituent have more to do with party than with income.

Finally we caution that our work focuses on just one type of representation: voting on bills that make it to the legislative floor. The preferences of high income voters may be more influential in determining the legislative agenda. Or the legislator may provide higher income voters more pork or services. Whether or not constituent income predicts performance on these legislator behaviors remains a question for future research.

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Table 1: Relationship between Legislator Vote and Mean Constituent Vote

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Outcome:	Vote Yes	Vote Liberally	Vote Liberally	Vote Liberally	Vote Liberally	Vote Liberally	Vote Liberally	Vote Liberally	Vote Liberally	Vote Liberally
Share District Voters Voting Yes	0.307*** (0.016)									
Share District Voters Voting Liberally		0.530*** (0.012)	0.483*** (0.014)	0.565*** (0.016)	0.581*** (0.053)	0.623*** (0.010)	0.463*** (0.015)	0.511*** (0.017)	0.559*** (0.015)	0.554*** (0.021)
N	7813	7813	6405	5994	232	6130	4589	3172	4798	2312
Sample:	Full Sample	Full Sample	More partisan bills	Mandatory Matches	Citizens vote before the legislators	Non redistricting years	Democratic Legislators	Republican Legislators	Assembly Votes on Bills Voted on by Both Chambers	Senate Votes on Bills Voted on by Both Chambers

Note: Robust standard errors clustered by legislator/chamber in parentheses.

Table 2: Summary Statistics, by Legislator Party and Income Tercile

Districts:	All	All			Democratic Legislators			Republican Legislators		
Constituent Household Income Terciles (Average Ranges in Thousands of 2006 dollars):	Full Sample	Low (32-62)	Middle (63-81)	High (82-191)	Low (30-61)	Middle (61-79)	High (80-189)	Low (35-65)	Middle (65-85)	High (86-192)
<i>Panel A</i>										
Proposition Turnout	.39 (.12)	.29 (.10)	.35 (.12)	.41 (.13)	.28 (.10)	.34 (.11)	.39 (.13)	.30 (.10)	.38 (.11)	.43 (.14)
Turnout for Highest Contests on Ballot in Most Recent Last Election (of Citizens 18 and older)	.40 (.10)	.30 (.08)	.37 (.09)	.43 (.11)	.29 (.09)	.35 (.10)	.41 (.11)	.31 (.08)	.39 (.09)	.45 (.11)
Share Registered (of Citizens 18 and older)	.72 (.09)	.70 (.08)	.77 (.08)	.83 (.09)	.70 (.08)	.76 (.08)	.82 (.09)	.69 (.08)	.78 (.07)	.84 (.08)
Share Registered Democratic (of those Registered)	.48 (.11)	.53 (.12)	.48 (.12)	.43 (.11)	.60 (.09)	.55 (.09)	.49 (.10)	.44 (.08)	.38 (.07)	.33 (.06)
Share Registered Republican (of those Registered)	.35 (.12)	.29 (.11)	.34 (.12)	.41 (.12)	.22 (.08)	.27 (.09)	.34 (.10)	.39 (.06)	.45 (.06)	.52 (.06)
Share Voting Democratic in Most Recent State Legislative Election (of two party vote) ^{1,2}	.56 (.21)	.63 (.21)	.58 (.22)	.52 (.21)	.77 (.12)	.72 (.14)	.66 (.15)	.43 (.14)	.37 (.12)	.32 (.11)
Share Voting Democratic in Most Recent Gubernatorial Election (of two party vote)	.51 (.16)	.58 (.17)	.52 (.16)	.47 (.15)	.68 (.13)	.62 (.14)	.55 (.14)	.44 (.10)	.39 (.09)	.35 (.09)
Share Voting Democratic in Most Recent Presidential Election (of two party vote) ¹	.58 (.14)	.66 (.14)	.60 (.15)	.54 (.14)	.75 (.10)	.69 (.11)	.62 (.12)	.52 (.09)	.46 (.07)	.41 (.07)
<i>Panel B</i>										
Legislator Voting Liberally	.60 (.49)	.60 (.49)			.74 (.44)			.39 (.49)		
Constituent Proportion Voting Liberally	.48 (.17)	.50 (.18)	.48 (.17)	.47 (.17)	.54 (.18)	.51 (.17)	.50 (.17)	.45 (.16)	.43 (.16)	.42 (.16)
Constituent Majority Voting Liberally Dummy	.49 (.50)	.54 (.50)	.50 (.50)	.46 (.50)	.61 (.49)	.58 (.49)	.54 (.50)	.43 (.50)	.38 (.48)	.35 (.48)
Congruence: Legislator Votes with Majority of Constituency	.76 (.42)	.77 (.42)	.76 (.43)	.75 (.43)	.79 (.41)	.77 (.42)	.74 (.44)	.74 (.44)	.76 (.43)	.77 (.42)
N	7813	7813	7813	7813	4589	4589	4589	3172	3172	3172

Notes: Sample includes only those bill/legislators on which legislators actually voted. Standard deviation in parenthesis.

¹1988 presidential and legislative votes missing so sample sizes are smaller for those variables.

²We do not have data on special elections. Thus the legislative election data is always drawn from the most recent general election. Under 4 percent of the legislative votes are cast by a member elected in a special election.

Table 3: Congruence by Constituent Income and Legislator Party, Robustness

	Democrats						Republicans					
	Tercile 1	Overall (Mean/Median)	Tercile 3	Ttest 1vs 3	Ttest 1 v med	N	Tercile 1	Overall (Mean/Median)	Tercile 3	Ttest 1vs 3	Ttest 3 v med	N
<i>Panel A</i>												
All votes	.79 (.41)	.76 (.43)	.74 (.44)	.00	.00	4589	.74 (.44)	.77 (.42)	.77 (.42)	.00	.75	3172
People Vote First	.90 (.31)	.76 (.43)	.60 (.49)	.00	.00	135	.66 (.48)	.84 (.36)	.93 (.26)	.00	.00	96
National Data	.71 (.45)	.69 (.46)	.57 (.50)	.00	.06	607	.39 (.49)	.41 (.49)	.51 (.50)	.00	.00	673
Poverty Terciles (reversed)	.79 (.41)	.76 (.43)	.73 (.44)	.00	.00	4589	.74 (.44)	.77 (.42)	.77 (.42)	.00	.80	3172
State Income Terciles	.79 (.41)	.76 (.43)	.72 (.45)	.00	.00	4163	.74 (.44)	.77 (.42)	.77 (.42)	.00	.95	3073
Quintiles	.79 (.40)	.76 (.43)	.73 (.45)	.00	.00	4589	.74 (.44)	.77 (.42)	.77 (.42)	.00	.89	3172
Taxation (Subjective)	.69 (.46)	.65 (.48)	.63 (.48)	.00	.02	352	.68 (.47)	.78 (.42)	.76 (.43)	.01	.58	263
Taxation (Objective)	.87 (.34)	.83 (.37)	.80 (.40)	.00	.00	2357	.66 (.47)	.70 (.46)	.69 (.46)	.02	.49	1546
Election Year	.85 (.36)	.82 (.38)	.81 (.40)	.00	.00	1837	.75 (.43)	.77 (.42)	.77 (.42)	.14	.32	1457
Not Term Limited	.77 (.42)	.75 (.44)	.73 (.45)	.00	.00	3325	.74 (.44)	.77 (.42)	.76 (.43)	.00	.36	2330
Party Not Majority	.81 (.39)	.78 (.42)	.74 (.44)	.00	.00	1535	.75 (.43)	.78 (.42)	.78 (.42)	.00	.93	2518
Close Vote	.54 (.50)	.50 (.50)	.47 (.50)	.00	.02	374	.65 (.48)	.67 (.47)	.73 (.44)	.00	.04	233
<i>Panel B</i>												
Party Terciles	.71 (.45)	.76 (.43)	.80 (.40)	.00	.00	4589	.73 (.44)	.77 (.42)	.76 (.42)	.00	.64	3172

Notes: Ttests standard errors clustered by legislator/body or by state in the case of national senate data. Ttests for National Data and State Income tercile 1 vs 3 differences run in specifications that control for percent of state (district) population in tercile.

Table 4: Predicting Legislator's Vote

	(1)	(1)	(2)	(2)	(3)	(3)
	R	D	R	D	R	D
Majority of Bottom Income Vote Yes (Liberally)	0.0607** (0.031)	0.216*** (0.025)	0.192*** (0.032)	0.399*** (0.026)	0.191*** (0.040)	0.605*** (0.040)
Majority of Top Income Tercile Vote Yes (Liberally)	0.418*** (0.027)	-0.0301 (0.020)	0.362*** (0.031)	0.115*** (0.022)	0.325*** (0.030)	0.0585** (0.023)
Constant	0.558*** (0.016)	0.376*** (0.018)	0.185*** (0.011)	0.438*** (0.014)	0.226*** (0.023)	0.352*** (0.027)
Additional Controls:					Turnout Last Election	Turnout Last Election
Test of Equality Bottom and Top Terciles	.00	.00	.01	.00	.03	.00

Table 4 (continued): Predicting Legislator's Vote
Outcome: Legislator Vote Liberally

			(5)		(6)	
	R	D	R	D	R	D
Majority of Bottom Income Vote Liberally	0.216*** (0.032)	0.420*** (0.025)	0.139*** (0.036)	0.386*** (0.030)	0.132*** (0.036)	0.153*** (0.055)
Majority of Top Income Tercile Vote Liberally	0.345*** (0.031)	0.0980*** (0.022)	0.236*** (0.038)	0.0670** (0.027)	0.138*** (0.051)	0.0428* (0.025)
Majority of District Vote Liberally			0.189*** (0.042)	0.0667* (0.035)	0.176*** (0.042)	0.0369 (0.034)
Majority of Top Party Tercile Vote Liberally					0.126** (0.050)	0.299*** (0.055)
Constant	0.181*** (0.007)	0.434*** (0.010)	0.180*** (0.007)	0.434*** (0.010)	0.181*** (0.008)	0.419*** (0.010)
Legislator Fixed Effects	Yes	Yes	Yes	Yes	Yes	yes
Test of Equality Bottom and Top Terciles	.03	.00			.93	.06
Test of Equality Top (Bottom) Income Tercile and Top Party Tercile			.11	.00	.89	.17

Notes: Sample size is 4589 for Democrats and 3172 for Republicans. Standard errors are clustered by legislator/body. Specification 5 includes controls for turnout in last election (terciles 1 and 3) and these variables interacted with majority vote liberally (terciles 1 and 3 respectively). Coefficients in these specifications are shown for values of turnout at the mean.

***denotes significance at the one percent level

**denotes significance at the five percent level

*denotes significance at the ten percent level

Table 5: Relative Congruence with Lower and Higher Income Constituents, Controlling for Income Tercile Congruence with Support Constituency View

	No Controls for Support Constituency View (1)		Controls for Support Constituency View (2)	
	R	D	R	D
Bottom Income Tercile Dummy	-0.0233*** (0.005)	0.0277*** (0.004)	-0.0073 (0.005)	0.00779** (0.003)
Top Income Tercile Dummy	0.00126 (0.004)	-0.0238*** (0.004)	-0.00956** (0.004)	-0.00517* (0.003)
Tercile-Party Congruence			0.318*** (0.032)	0.596*** (0.026)
Test of Equality Bottom and Top Terciles, P value	.00	.00	.61	.00

Notes: Sample size is 9,516 for Republican specifications and 13,767 for Democratic specifications. Robust standard errors clustered by legislator/body.

***denotes significance at the one percent level

**denotes significance at the five percent level

*denotes significance at the ten percent level

Appendix Table 1: Relative Marginal Impact of Opinions by Income Tercile in Legislator's Decision Function
 Outcome: Legislator Yes Vote

	Democrats				Republicans			
	Coefficient on Majority Bottom Tercile Vote Yes	Coefficient on Majority Top Tercile Vote Yes	Test of Difference of Top/Bottom Coefficients P value	N	Coefficient on Majority Bottom Tercile Vote Yes	Coefficient on Majority Top Tercile Vote Yes	Test of Difference of Top/Bottom Coefficients P value	N
<i>Panel A</i>								
All votes	0.216*** (0.025)	-0.0301 (0.020)	.00	4,589	0.0607** (0.031)	0.418*** (0.027)	.00	3,172
People Vote First	0.223** (0.110)	0.0178 (0.027)	.08	135	0.0357 (0.036)	-0.0357 (0.036)	.32	96
National Data	0.430*** (0.034)	-0.203*** (0.037)	.00	585	-0.035*** (0.055)	.118* (0.069)	.00	664
Poverty Terciles (reversed)	0.253*** (0.024)	-0.0679*** (0.018)	.00	4,589	0.0429 (0.033)	0.425*** (0.028)	.00	3,172
State Income Terciles	0.202*** (0.025)	-0.013 (0.021)	.00	4,163	0.0896*** (0.030)	0.403*** (0.027)	.00	3,073
Quintiles	0.225*** (0.024)	-0.0348** (0.018)	.00	4,589	0.0566** (0.027)	0.424*** (0.024)	.00	3,172
Taxation (Subjective)	-0.162*** (0.045)	-0.203*** (0.037)	.53	352	-0.0918* (0.055)	0.404*** (0.067)	.00	263
Taxation (Objective)	0.307*** (0.028)	0.0276 (0.017)	.00	2357	0.0254 (0.039)	0.333*** (0.033)	.00	1546
Election Year	0.252*** (0.035)	-0.0521* (0.027)	.00	1,837	0.0583 (0.042)	0.364*** (0.035)	.00	1,457
Not Term Limited	0.164*** (0.030)	-0.00573 (0.025)	.00	3325	0.0398 (0.034)	0.422*** (0.030)	.00	2330
Party Not Majority	0.133*** (0.044)	0.0313 (0.035)	.17	1535	0.0611* (0.035)	0.428*** (0.029)	.00	2518
Close Vote	0.092 (0.063)	-0.255*** (0.058)	.00	374	0.109 (0.080)	0.320*** (0.083)	.15	233
<i>Panel B</i>								
Party Terciles	-0.0814*** (0.017)	0.276*** (0.022)	.00	4,589	0.0322 (0.029)	0.440*** (0.025)	.00	3,172

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Notes: Each row shows the coefficients on two regressions: On the left hand side coefficients are from a regression of legislator yes vote on majority of tercile1 favors yes and majority of tercile 3 favors yes for Democratic legislators. On the right hand side the same regression is run for Republican legislators. National data and state income tercile rows also include controls for fraction of district (state) population in the tercile, fraction of district(state) population in tercile interacted with indicator for whether the majority of the tercile voted yes. For these specifications coefficients on the main effect indicator variables (majority of tercile1 vote yes and majority of tercile 3 vote yes) represent the marginal association of these variables evaluated at fraction of district(state) population in the tercile equals 1/3. Robust standard errors clustered at the legislator/chamber level.

***denotes significance at the one percent level

**denotes significance at the five percent level

*denotes significance at the ten percent level