Social Context and Economic Biases in Representation Revisited

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Abstract

This article replicates, questions, and expands upon the findings of Ellis (2013), "Social Context and Economic Biases in Representation." To do so, we explore the effects of district level social and economic variables on representation biases- something Ellis defines as "the degree to which wealthy citizens' views are more strongly represented than poorer citizens' views in the choices of policymakers." After analyzing the results from Ellis (2013), we provide simulated data that supports the view that lower income constituents are better represented in districts that have high levels of electoral competition and low median incomes. We then show that the relationship holds when we recreate the model using Americans for Democratic Action (ADA) scores instead of DW-NOMINATE scores as a measure of ideological distance.

1 Introduction

The effects of income inequality on the political process have been studied extensively in the social science literature. However, the relationship between income, district inequality, and political representation is still not well understood. One potential side effect of income inequality is the growing influence of wealthy citizens on the political process. Simply put, Members of Congress may be more likely to represent the policy preferences of the wealthy over the poor. While a number of scholars have explored the question of unequal representation in Congress, they have drawn different conclusions about the degree to which Members of Congress favor the policy preferences of the wealthy or the poor (Gilens, 2011; Soroka and Wlezien, 2008). While the majority of this research is concerned with national trends in representational equality, Ellis (2013) looks for heterogeneity across political contexts, and suggests that political biases in representation are driven by contextual factors, including district competitiveness, median household income, district inequality, and the presence of unions. According to this argument, Members of Congress will better represent the views of the poor when the district exhibits obvious signs of inequality and reelection is not guaranteed.

Although this assertion is compelling, this claim requires closer scrutiny. It may simply be the case that representatives cannot represent the views of every constituent in their district, and as a result they cater to wealthy members of their own party. In this paper, we find evidence against the claim that representatives universally cater only to wealthy co-partisans. Instead, we provide evidence that supports the findings in Ellis (2013). Representatives are not always differentially more representative of the wealthy. We find that Democratic Members of Congress do a better job directly representing the views of their constituents overall, and that lower income citizens are better represented than wealthy constituents in Democratic districts that have low median household incomes and are electorally

competitive.

In this paper, we replicate Ellis (2013), offer another method to measure ideological proximity, and simulate an ideal district for the representation of low income constituents. The paper proceeds as follows: in section one, we recreate the table generated in Ellis (2013) and discuss potential discrepancies we observe in the analysis. In section two we simulate new data. In section three we rerun the analysis using ADA scores instead of DW-NOMINATE scores in order to test the strength of the relationship between district context and representation when the analysis in limited to significant legislation, and in section four we conclude.

2 Replication

We begin by replicating the results produced by Ellis (2013), drawing on data from the 2008 Cooperative Congressional Election Study (CCES). In Table 1, we reproduce four models to analyze the relationship between a constituent's income and their ideological proximity to their Member of Congress. Following Ellis (2013), we estimated a multilevel model, with district-level random effects included. District level data for the contextual variables comes from the American Communities Survey and the Cook Partisan Voting Index.

In Models 1 and 2, the dependent variable is the *distance gap* between the self-reported ideology of a constituent and their Member of Congress. The CCES asks respondents to locate themselves on the ideological spectrum on a scale from 0 to 100, with 100 being the most conservative. The ideological position of the legislator is calculated by re-scaling the first dimension DW-NOMINATE scores for legislators in the 110th Congress to be on a 100-point scale. The distance gap variable is the absolute value of the difference between constituent and MOC ideology scores, with lower numbers indicating greater ideological agreement, and therefore better representation, between constituent and the MOC. Model 1 includes only

individual-level covariates, whereas Model 2 includes district-level covariates to account for heterogeneity in district context and the interaction between individual- and district-level variables.

In Models 3 and 4, the dependent variable is *key vote representation*. The CCES asks respondents whether they supported or opposed specific pieces of legislation that were voted on in the 110th Congress. The key vote variable is then calculated by measuring congruence between as MOCs actual vote on the legislation and the respondent's preferences on the legislation in question. In this case, the direction of the variable is reversed, and higher key vote scores indicates greater agreement between constituent and representative. As in the previous two models, Model 3 includes only individual-level covariates, while Model 4 introduces district-level contextual variables.

We were able to replicate a majority of the findings in Ellis (2013):

Consistent with Ellis (2013), the negative and significant coefficients on income in Models 1 and 3 indicate that constituents with higher incomes are overall better represented than constituents with lower incomes. Income is coded from 1 to 14 at $10,000 increments, thus a one category jump in income is associated with a 0.28 percentage point decrease in ideological distance between constituent and MOC. Similarly, a one category jump in income leads to a 0.184 percentage point increase in representation as measured by key vote congruence. These results are consistent with the general finding that wealthier constituents are better represented overall. However, they do not reflect possible heterogeneity in representation across varying district contexts.

As a result, models 2 and 4 include district-level variables and a number of interaction terms in order to determine if there is differential representation of wealthy and poor constituents across heterogeneous contexts. Here our results diverge from those reported by Ellis (2013), but are consistent with his overall findings. We first look at Model 2, which has ideological distance as the dependent variable. While most of our coefficients match those

Table 1: Replication of Table 1

	Dependent variable:			
	Ideological Distance		Key Vote Representation	
	(1)	(2)	(3)	(4)
Income	−0.280***	−0.245***	0.184***	−0.344***
	(0.036)	(0.051)	(0.051)	(0.072)
Black	1.463***	1.197***	−2.236***	−2.662***
	(0.407)	(0.410)	(0.586)	(0.582)
Latino	1.828***	1.666***	−0.924	−1.471**
	(0.430)	(0.430)	(0.625)	(0.618)
Voter	0.845**	0.842*	−2.265***	−1.995***
	(0.430)	(0.430)	(0.580)	(0.577)
Political Activism (scale)	0.518***	0.524***	−0.352***	−0.342***
	(0.075)	(0.075)	(0.108)	(0.107)
Political Knowledge (scale)	0.199***	0.181**	−0.085	−0.160
	(0.074)	(0.074)	(0.103)	(0.102)
Copartisan of MC	−14.641***	−14.737***	23.505***	23.018***
	(0.230)	(0.231)	(0.332)	(0.331)
Income * Median Household Income		−0.067***		0.078**
		(0.026)		(0.037)
Income * District Inequality		−1.730		−0.193
		(1.091)		(1.549)
Income * District Competitiveness		−0.015***		0.041***
		(0.004)		(0.006)
Income * District Unionization		−0.219		−2.317***
		(0.360)		(0.508)
Income * Republican MC		−0.058		1.100***
		(0.072)		(0.102)
Constant	30.634***	32.273***	51.653***	56.491***
	(0.436)	(0.472)	(0.678)	(0.698)
Observations	23,154	23,119	24,250	24,250
Log Likelihood	−98,358.020	−98,150.720	−112,331.700	−112,087.600

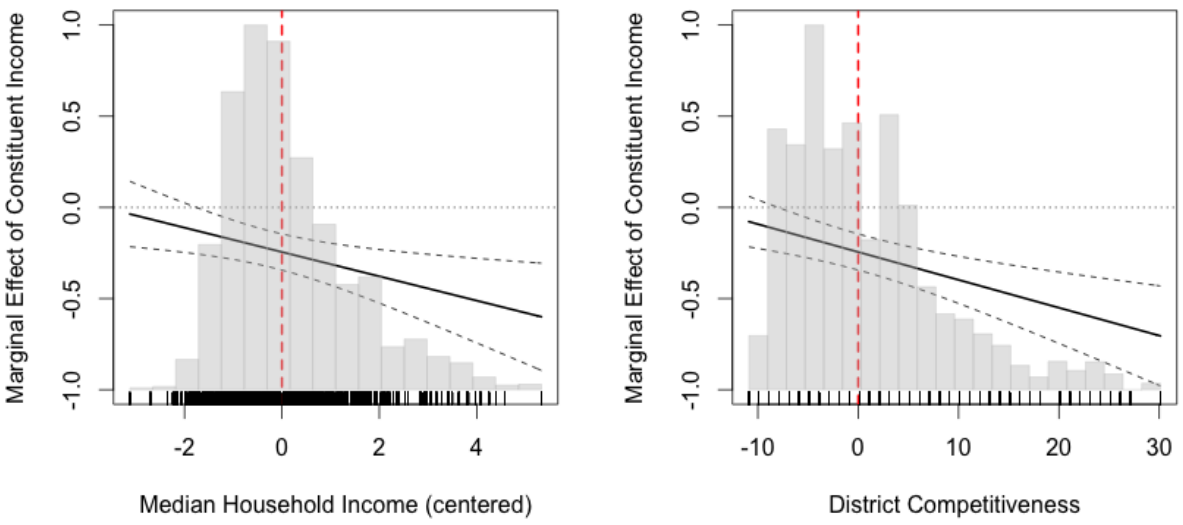
Notes: District-level contextual variables were included in Models 2 and 4, but the lower-order terms were omitted from the table for space-saving purposes.
*p<0.1; **p<0.05; ***p<0.01

reported by Ellis, we find differences from the values he reports for interactions between constituent income and three important contextual variables: district median income, district competitiveness, and Republican Member of Congress. In contrast to the coefficient values reported by Ellis, we find the interactions between constituent income and both district median income and district competitiveness to be negatively signed, and in the case of district competitiveness, the coefficient is one order of magnitude smaller than that reported by Ellis. Additionally, in Model 2, we find a different coefficient for the interaction of income and Republican MC than is reported in the original paper. Finally, we do not find the coefficient on the interaction between income and district level inequality to be significant.

However, despite the apparent discrepancy in our findings and those generated by Ellis, we are able to determine that the interaction effects we observe are largely in keeping with Ellis's hypotheses. In order to clarify the nature of the interactions in the model and identify possible heterogeneity in representation, we generated several interaction plots. Figure 1 shows the marginal effect of constituent income on ideological distance across levels of district median income and district competitiveness. If Ellis's hypothesis that lower income constituents will be better represented (or ideological distance will decrease) in lower-income districts and districts that are highly competitive is correct, then the marginal effect of income on ideological distance should be negative as district income decreases and district competitiveness increases. When representation is measured by the ideological distance variable, we do not find evidence to support the idea that the poor are better represented relative to the wealthy at any level of district income or competitiveness. While the effect grows more negative as district income increases, across all levels of district median income, constituent income is negatively associated with ideological distance. This suggests wealthier constituents are consistently better represented than poorer constituents, regardless of district-level income. We see a similar story when it comes to district competitiveness. Higher values on the district competitiveness measure indicate "safer" districts. Thus, as

districts become safer, the marginal effect of constituent income on ideological distance is increasingly negative, but is also negative across all levels of district competitiveness. This indicates that the effect of income on ideological distance is negative regardless of district context. Thus, this model suggests that not only will the wealthy be better represented as district income and electoral safety increase, but at no point are lower income constituents better represented than their wealthier counterparts.

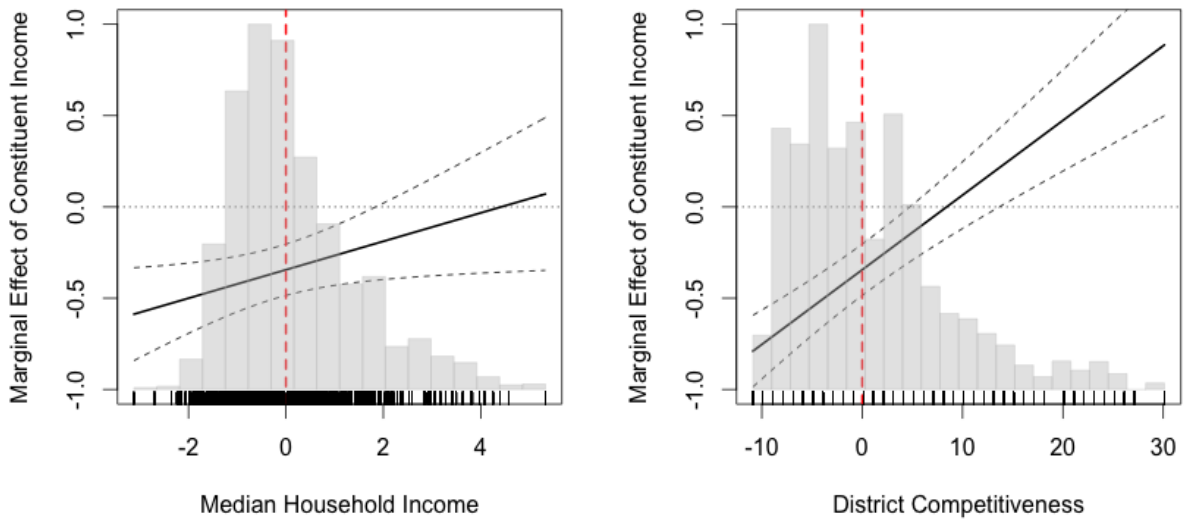
Figure 1: Dependent Variable: Ideological Distance



A different pattern emerges when the dependent variable is key vote representation. Unlike ideological distance, a positive relationship between key vote and income indicates greater congruence between a constituent and their MOC. Key vote is perhaps a superior idealization of ideological proximity and representation than the ideological distance variable, since it does not rely on self-reported ideology. Instead, it is based on the constituent's and representative's preferences on actual policy items. Therefore, it is likely to portray more meaningful information about the constituent-representative relationship. As seen

in Figure 2, the marginal effect of income is mostly negative for all of the values of median household income, suggesting that a marginal increase in constituent income leads to reduced representation in most districts. However, the change in effect size has a positive slope, meaning that the effect decreases in size as district income grows larger. Additionally, the direction of the effect actually reverses for districts with the highest level of income. We see a similar divergence in the marginal effect of income on vote representation when we turn to district competitiveness. The effect is negative for highly competitive district (lower values), but becomes positive for districts that a very safe. These results suggest that the positive interaction effect produced in Model 4 is highly skewed toward high-income and electorally safe districts, and that lower income constituents are in fact better represented in low income and electorally competitive districts.

Figure 2: Dependent Variable: Key Vote



Our findings generally support and corroborate those produced by Ellis, which suggests that the discrepancies we observe between our table and his are largely due to typographical

errors. In short, when representation is measured by key vote congruence between a constituent and their Member of Congress, representation does appear to change in response to contextual differences across districts, such that certain contexts facilitate greater representation of the poor. We subject these findings to more rigorous analysis in the following sections.

3 Simulation

Ellis identifies three specific circumstances in which poorer constituents are better represented than their wealthier counterparts, when measured by key vote: competitive, low-income, or high-union districts represented by a Democrat MOC. Given the variance we see in our interaction plots above, we subject this claim to a more rigorous test, by simulating expected values generated from Model 4. This allows us to compare the level of representation across different district contexts. We begin by simulating key vote representation when all of the covariates are set at their mean value. This represents the level of representation in the average district. We then compare this distribution of expected values to those in the district contexts specified by Ellis. By running simulations, we are able to manipulate the context of a district and explore the interaction of income and key contextual variables without relying solely on the observed values. In this way, we can more directly target the circumstances Ellis identifies as better for the representation of the poor than for the wealthy.

We simulate representation for the average constituent in Democratic districts that are low-income, competitive, or those with a strong union presence. As seen in Figures 3, 4, and 5, we then directly test the effect of income on representation by increasing the value of constituent income in our simulation by one standard deviation. The increase in constituent income consistently reduces key vote representation relative to the average constituent. This confirms and clarifies the relationship between constituent income and representation across

district contexts. While at a national level, it appears that representation increases with income, Members of Congress, specifically Democrats, appear sensitive to district-level context, and are more likely to represent the poor when there is strong union presence, lower median income, and electoral competition in their district.

This illustration speaks to a perhaps more subtle point about representation and district context. When we generate these same simulations for Republican MOCs, we find that they remain more representative of wealthier constituents than poorer constituents, despite salient context, except in competitive districts, and are overall less representative of the poor than Democrats. This suggests that much of the heterogeneity (and consistency) that we see in representation is driven by party identification and the nature of each party's platform and constituency, which likely constrains who a MOC will more strongly represent within their district.

Figure 3: Change in Representation with Income Increase: Competitive Districts, Democrat MOC

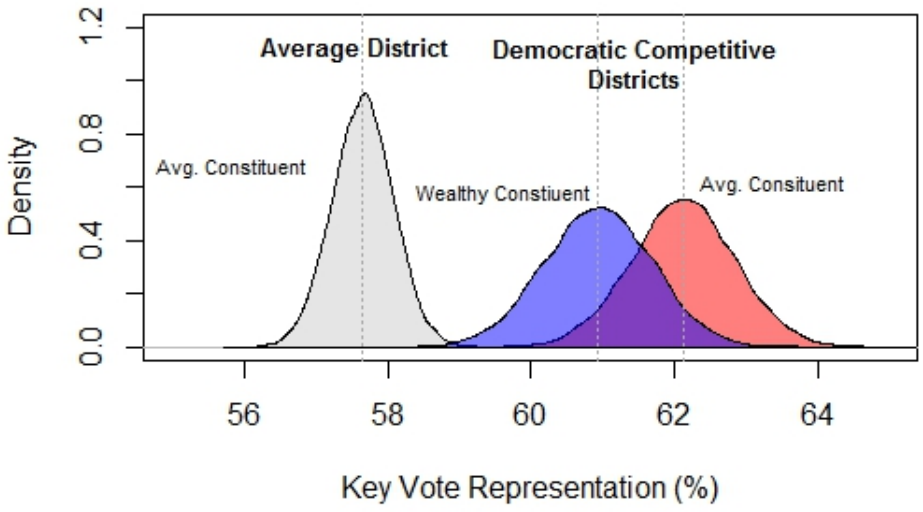


Figure 4: Change in Representation with Income Increase: Low-Income Districts, Democrat MOC

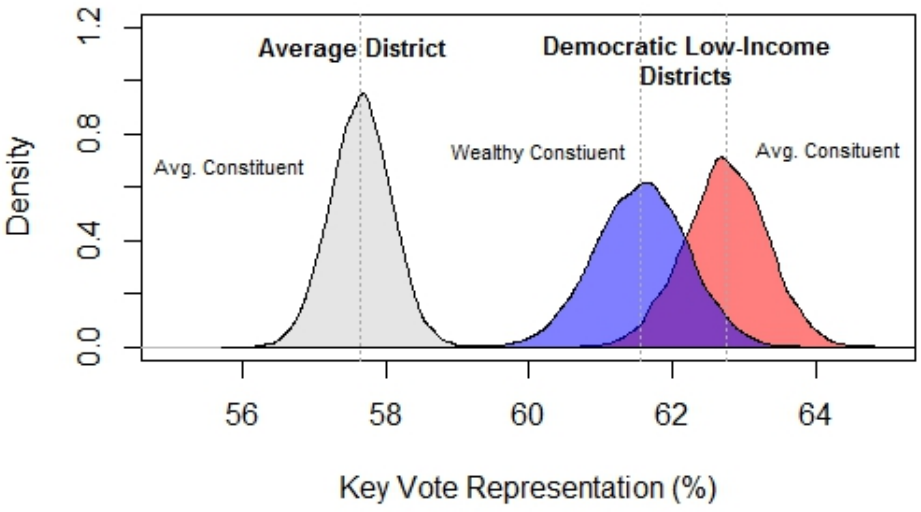
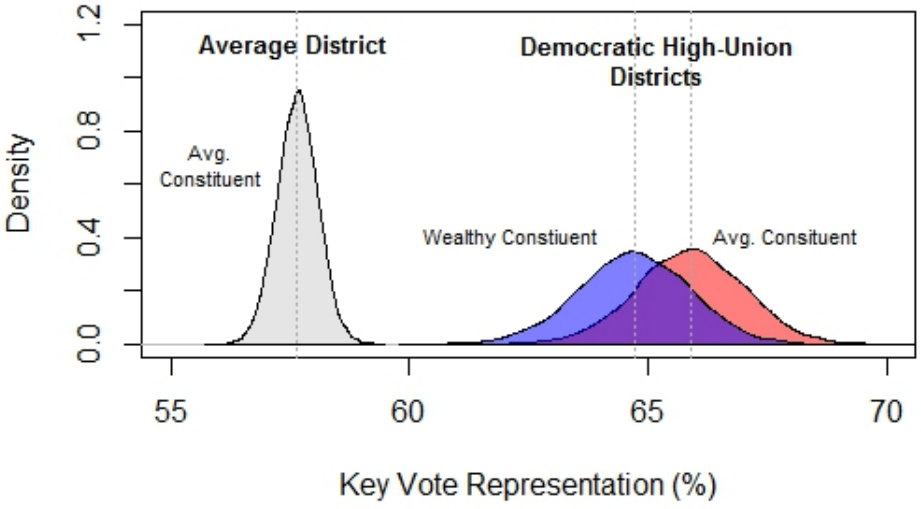


Figure 5: Change in Representation with Income Increase: High-Union Districts, Democrat MOC



4 ADA Scores

To further test the hypotheses proposed by Ellis, we generate a new measure of ideological representation. As previously explained, Ellis (2013) uses two variables to measure representation: ideological distance and key vote representation. To determine the ideological distance gap between constituents and their MOCs, DW-NOMINATE scores are used to calculate the ideological position of representatives. However, this may cause misleading results. DW-NOMINATE scores incorporate all roll-call votes, including those on simple procedural matters. It may be the case that Members of Congress represent their constituents when it comes to votes that matter. Although the key vote variable attempts to account for this possibility, restricting the analysis to only eight votes may exclude important legislation. In order to test this theory, we re-ran the model using Americans for Democratic Action (ADA) scores. The ADA is an interest group that rates the liberalism of representatives on an annual basis. ADA scores place representatives on a 0 to 100 scale, with 0 being the most conservative and 100 the most liberal. The scores are based on twenty significant pieces of legislation that were up for a vote in the 110th Congress. For example, the analysis includes HR 1338, which called for equal pay for men and women, and HR 5781, which called for paid parental leave for federal employees. We generated an alternative measure of ideological distance by taking the absolute value of the difference between a constituent's self-reported ideology and their MOC's ADA score. We recreated the same models from Table 1 using our new measure of representation as the dependent variable.

The results of this analysis can be seen in Table 2. All of the variables retain their sign from the original model. In the model without district-level variables, the effect of individual level income remains significant, but shrinks in size from -0.280 when estimated with ideological distance to -0.109 when estimated with ADA scores. However, the addition of the district-level variables leads to largely the same conclusions as those reached by

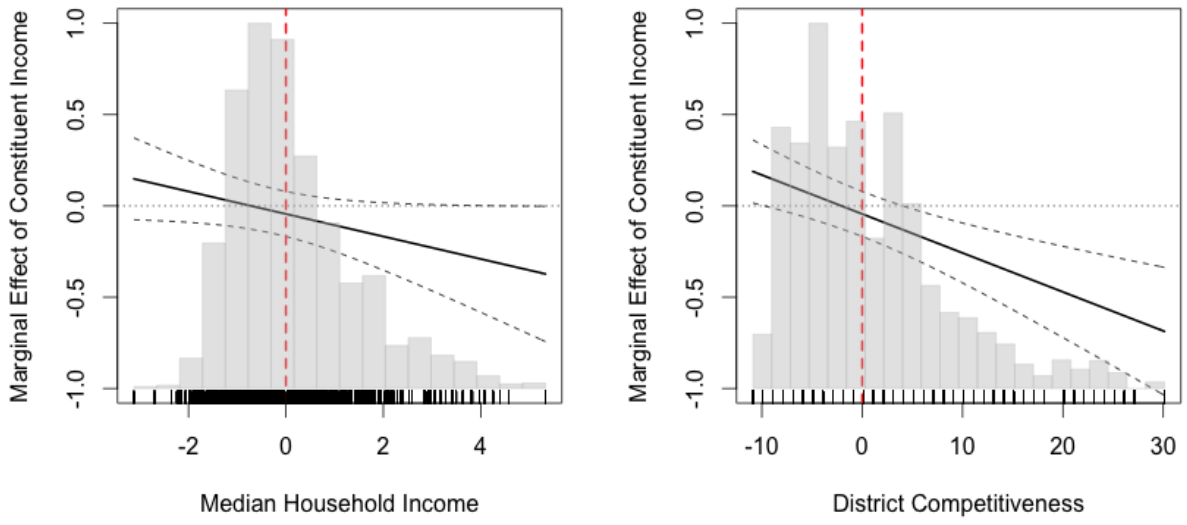
Ellis (2013). In the second model, the effect of individual level income is small and insignificant. However, district median income and district competitiveness retain their significance.

Table 2:

	Dependent Variable: Ideological Distance	
	ADA Distance	
	(1)	(2)
Income	−0.109**	−0.044
	(0.044)	(0.063)
Black	1.082**	0.902*
	(0.514)	(0.515)
Latino	1.222**	1.074**
	(0.542)	(0.540)
Voter	1.649***	1.640***
	(0.530)	(0.530)
Political Activism (scale)	−0.299***	−0.300***
	(0.092)	(0.092)
Political Knowledge (scale)	0.209**	0.185**
	(0.091)	(0.091)
Copartisan of MC	−19.730***	−19.776***
	(0.285)	(0.286)
Income * District Median Income		−0.062*
		(0.032)
Income * District Inequality		−1.523
		(1.369)
Income * District Competitiveness		−0.021***
		(0.006)
Income * District Unionization		−0.590
		(0.448)
Incomes * Republican MC		−0.124
		(0.090)
Constant	42.576***	49.327***
	(0.685)	(0.696)
Observations	23,009	22,974
Log Likelihood	−102,751.300	−102,431.100

Notes: District-level contextual variables were included in Model2, but the lower-order terms were omitted from the table for space-saving purposes.
*p<0.1; **p<0.05; ***p<0.01

Figure 6: Dependent Variable: Ideological Distance Calculated with ADA Scores



Once again it is necessary to plot the interactions in order to interpret their effects. Figure 5 shows that the marginal effect constituent income for differing levels of median household income is negatively associated with ideological distance, as measured by ADA scores. However, at low levels of median household income the marginal effect of constituent income is positive. This means that the views of wealthier constituents are less well represented than those of poorer constituents in these districts. Additionally, plotting the marginal effect of constituent income against varying levels of district competitiveness reveals that constituent income is positively associated with ideological distance for very competitive districts. This suggests that lower income constituents are better represented when the representative's future is uncertain. Overall, these results reinforce our findings from the models in Table 1. It appears that ADA scores do in fact provide a middle ground between the ideological distance and key vote measures. This measure gives a more moderated view of representation than that presented in the key vote variable, and is likely to be more realistic due to the fact that it encompasses more votes and is limited to significant legislation. However, this method

still relies on respondents to place themselves on the ideological spectrum, and is therefore subject to improvement.

5 Conclusion

In conclusion, this paper reaffirms the findings of Ellis (2013). Representation does appear to vary with the contextual features of a district, such that low income constituents are better represented than high income constituents when districts are highly competitive and median household income is low. We argue that the key vote variable is a better measure of representation, and find that the results of this model are reaffirmed when tested with ADA scores instead of DW-NOMINATE Scores. After re-analyzing the models and simulating new data, we have presented evidence that low income constituents are better represented than high income constituents in certain district contexts. While this paper makes strides in understanding the constituent-representative relationship, more work is still required. Future analysis could include the addition of data from more recent election years, alternative measures of district-level context, and the formulation of a probabilistic model.

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