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Legislative Representation in a Single-Member versus Multiple-Member District System: The Arizona State Legislature

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Most research on legislative decisionmaking has focused on legislatures with single-member district systems, but much less is known about legislatures with multiple-member district systems. This study compares a multiple-member legislative chamber, the Arizona House of Representatives, to a single-member system, the Arizona Senate. First, we examine the ideological preferences across the two chambers, and we find that the House system produces more ideological extremism than the Senate. Second, we test a model of legislative decisionmaking that employs constituency variables, legislator attributes and ideology. We find that constituency characteristics are significant in the Senate, but in the House ideology dominates. The combination of ideological extremism and its greater importance in decisionmaking in the House suggests powerful effects of the multiple-member district system.

How do legislators represent the interests of the people? A multitude of empirical studies have attempted to determine which factors explain voting patterns of members of Congress. Evidence has pointed to economic interests of the district (McArthur and Marks 1988; Richardson and Munger 1990), ideological preferences of the constituency (Kau and Rubin 1982; Peltzman 1984), and legislator ideology (Kalt and Zupan 1984; Poole and Rosenthal 1991). The empirical results of such models have provided a portrait of representation that is complex and varied across issue areas and time. One limitation of these models, however, has been that most of the research has been on Congress, and fewer empirical studies of voting have been conducted on state legislative voting (see Jewell 1981; Moncrief, Thompson, and Cassie 1996).

The need for empirical analysis of state legislative voting patterns exists on several dimensions. First, it is important to see if the results found in congressional studies extend to other legislatures. Second, state legislatures have experienced tremendous changes over the last few decades in terms of professionalism (King 2000) and power vis-a-vis governors in the budgetary process (Rosenthal 1998). Because these changes have not been uniform and states started at different points initially, these features provide tremendous opportunities for assessing representation in a host of legislative environments. Finally, state legislatures provide a rich variety of institutions that allow for a comparative assessment of the impact of different legislative features. For example, state legislatures offer contrasts to Congress on several possible dimensions: term limits in many states, a unicameral legislature in Nebraska, constitutional session limitations in most states, and multiple-member districts versus single-member districts in a few states.

Arizona provides a compelling test of legislative representation because of its mixed system of representation. Arizona has had multiple-member districts (MMD) in the House and single-member districts (SMD) in the Senate since the reapportionment revolution of the 1960s. As a result of a court-ordered plan, Arizona has 30 legislative districts, each of which is represented by 2 house members and 1 senator (Berman 1998). In the House elections, each voter has two votes. The two candidates who receive the most votes win. Voters cannot use both votes on one candidate, but they may choose to cast their first vote and abstain with their second. In the Senate, it is the traditional one-person/one-vote, first-past-the-post, winner-take-all system. Senators and representatives are elected from districts with the same geographical boundaries and have the same age and residency requirements. Although Arizona is only one state, we do not feel that this is a limitation of our study. As Nicholson-Crotty and Meier (2002: 6) note, "At times, the focus on a particular state may be justified because its unique attributes provide for the most rigorous test of the theoretical proposition under consideration." Because of the comparability of the two chambers, we believe that Arizona provides a unique opportunity to test the effects of multiple-member districts.

Does the MMD system in the House produce different legislative behavior than the SMD system of the Senate? To test for such effects, we develop a measure of ideology for Arizona state legislators and compare the distribution between the two chambers. We test the thesis that MMDs produce more ideologically diverse legislators than SMDs (Cox 1990).

We then conduct a study of legislative voting for both chambers in the Arizona State Legislature to assess whether the institutional difference affects legislative decisionmaking. In particular, we develop voting models and test them with votes on higher education policy in the 44th legislature in Arizona. We examine higher education policy votes for

several reasons. First, state authority over higher education policy is less encumbered by other levels of government than other major policy responsibilities, such as secondary or elementary education, social welfare, or the criminal justice system. Second, proxy measures for constituent interests on higher education, such as percent with college degrees or proximity to a state university, are relatively direct. Third, higher education is one of the major discretionary spending categories for any state. Fourth, legislator personal interests in the policy can also be represented in a direct fashion by examining the educational experience of the legislator. Fifth, the Arizona Board of Regents through its statement of approval for legislative bills provides a basis for determining what constitutes a supportive vote for higher education.

IDEOLOGICAL EXTREMISM

Do the MMDs of the Arizona House produce a different style of representation than the SMDs of the Arizona Senate? Most of the research in the U.S. on MMDs has focused on representation of disenfranchised groups. For instance, scholars have found that MMDs tend to produce more female representatives than SMDs (Arceneaux 2001; Hogan 2001; King 2002). At the same time, however, MMDs tend to retard the election of African Americans to office (Moncrief and Thompson 1992; Jewell 1982; Welch and Studlar 1990).

Other scholars have focused on how MMDs affect the ideology of office-holders. In separate studies of Chile, Dow (1998) and Magar, Rosenblum, and Samuels (1998) found that MMDs produce more ideologically extreme legislators. Using a formal model, Cox (1990: 912) identifies the electoral incentives for several kinds of MMD systems, and he argues “. . . when there are more than two candidates competing under ordinary plurality, equilibria are noncentrist; rational vote-seeking politicians have an incentive to avoid bunching at the median.”

Why do MMDs result in a movement away from the median voter? According to Schiller (2000: 167). “Rather than adopting campaign platforms that appeal to the median voter in a district, each candidate for [office] adopts a more extreme position (right or left) of the party in order to attract the majority of the party’s voters in a given district.” Instead of concentrating around the median voter, candidates in MMD elections are more likely to move to the extremes to stake out a particular constituency. Although it is not a true MMD, Schiller (2000) argues that the same process is at work in the U.S. Senate, where two Senators represent the geographic constituency. Schiller (4) suggests “a combination of electoral incentives and institutional forces . . . push senators in contrasting directions.”

Unfortunately, very little research has empirically tested these theories about the impact of MMDs on the ideology of state legislators. This is particularly problematic because a number of state legislatures still employ some variant of MMDs, including the entire lower chamber in Arizona, New Jersey, North Dakota, and South Dakota. In one of the only empirical studies of the ideological impact of MMDs in state

legislatures, Adams (1996) compares the ideology of parties in the Illinois House before and after a major reform of the electoral district system. Prior to the reform in 1982, the Illinois House had MMDs, but after the change it had single-member districts. Adams finds that MMDs produce more ideologically extreme parties than SMDs.

Adams’ choice of Illinois, however, is problematic.¹ Illinois did not have a traditional MMD system, but rather used a cumulative voting system that required both parties to nominate two candidates in each 3-member district (Kuklinski, Nowlan, and Habel 2001). The net result was a system in which each legislative district had one Democrat and one Republican and only the third seat was in question. Certainly this calls into question whether Adams’ findings can be generalized to the more commonly used bloc-style MMD system used in Arizona and all other states with MMDs. In addition, it is problematic for a time-oriented comparison, such as Adams’ work, to be tested with a cross-sectional design that cannot control for other temporal changes that could have occurred simultaneously. As a result, we believe that the issue of whether MMDs produce more ideologically extreme state legislators is still an open question.

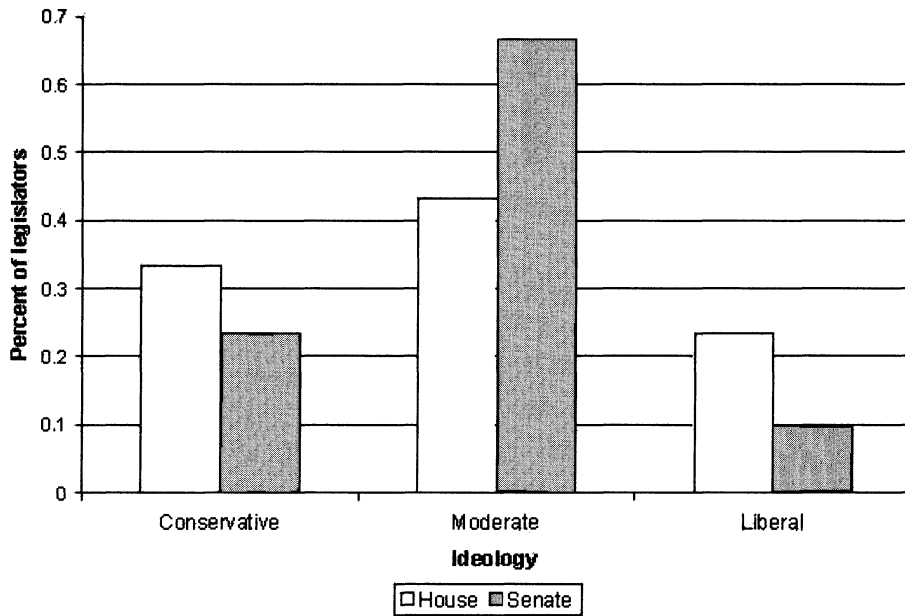
TESTING THE IMPACT OF MMDs ON IDEOLOGICAL EXTREMISM IN ARIZONA

We test for ideological extremism in multiple versus single-member district systems by comparing the ideologies of Arizona state representatives with the ideologies of Arizona state senators. Arizona provides a unique test as senators and representatives have the same age limits, residency requirements, length of terms, and represent the exact same geographic districts. Two members from the House and just one senator represent each of the thirty districts. If the ideological distribution of the members in the two chambers is different, then it suggests that the type of electoral system affects legislative representation.

Because no interest group voting support score similar to the ADA measure exists for the state of Arizona, we developed an additive scale of interest group support based on published endorsements of eight interest groups in Arizona. We employ the endorsements of 4 conservative and 4 liberal interest groups to determine a legislator’s ideology. The conservative groups are the National Federation of Independent Business, AMIGOS (pro business mining suppliers), the Arizona Realtor Association, and Arizona Right to Life. The liberal groups are the AFL-CIO, Arizona Education Association, AFSCME (government workers), and the Sierra Club. For each liberal endorsement a legislator receives a score of one (+1), while an endorsement from a conservative group results in a negative one (–1). Therefore, a 4 indicates an

¹ We want to thank an anonymous journal referee for raising the issue of whether the Illinois system was a true MMD system with the party requirement and whether it was therefore a fair test of ideological extremism.

≡ FIGURE 1
 IDEOLOGY SCORES ACROSS THE TWO CHAMBERS



extremely liberal legislator, whereas a -4 indicates an extremely conservative legislator.²

The results in Figure 1 show that there is a clear difference in the ideologies of the members of the House and Senate. The figure shows the 9-point scale divided into three categories: extreme conservative, moderate, and extreme liberal.³ Two-thirds of the senators are in the moderate range, but less than half of the House members (43.3 percent) are moderates. Conversely, House members are more conservative (33.3 percent versus 23.3 percent) and yet also much more liberal (23 percent versus 10 percent). Clearly, the House members are more extreme in both directions than the senators. Given that the legislators from the two chambers are representing the exact same districts, it is striking to see such distinct distributions of ideology for the two chambers.

² Although it is difficult to insure the reliability and validity of any ideological measure, we use two methods: the Cronbach's Alpha for reliability and face validity. The Cronbach's alpha is .839 for the liberal ideology measure and .730 for the conservative ideology measure. Both of these results exceed the critical value of .7 commonly accepted to indicate reliability. In addition, a comparison of partisanship and our measure of ideology shows correlation, which is one indication of face validity. In the Senate, 12 of 16 Republicans are classified as conservatives by our measure, and 13 of 14 Democrats are classified as liberals. In the House, 30 of 40 Republicans are classified as conservatives by our measure, and 18 of 19 Democrats are classified as liberals. Though partisanship and ideology are not the same concept, it would be disturbing if the two variables were strongly out of line with each other.

³ The scale is -4 to +4. The -4 and -3 categories are labeled as extreme conservatives, and extreme liberals are identified by a +3 or +4 score. The moderates are in the range from -2 to +2. This coding system puts more legislators into the moderate category so it makes moderation look more prevalent, but it also provides a more stern test of the extremism hypothesis.

To further assess the impact of the two electoral systems, we compare the legislators representing the same district with a few different tests. First, is the senator's ideological score more moderate or extreme when compared to the average ideological score of the two House members from that same district? If the average House score is further away from zero than the senator's score, it would suggest that the House members from that district are more extreme than the senator. For example, two House members with scores of 0 and 4 (or an average of 2) are more extreme than a senator with a score of 1. In 15 of the 30 districts the average ideological score of the House delegation is more extreme than the senator's score. In 4 districts the scores are equal, and in the remaining 11 districts the senators are more extreme.

Another method of testing the differences between the ideologies of the two chambers is to compare the differences between the individual members in each district. We compare the ideological score for each House member to the corresponding senator from the same district. Again, extremism is defined as absolute distance from zero. This test shows that 47 percent of individual House members are more extreme than their corresponding senator. Twenty-eight percent are less extreme and the remaining 25 percent have the same level of extremism as the senator from their district. We believe that these findings support our hypothesis.

The two chambers also differ in the level of moderation within both party caucuses. For Republicans, the House caucus is somewhat more conservative than the senate caucus. Almost three-fourths of the House Republican caucus is in the conservative range of -4 to -2, but only about half of the Republican senators are in the conservative range and a quarter of the Republican senators are in the moderate to liberal range (0 to +2).

≡ TABLE 1
ORDERED LOGISTIC REGRESSION RESULTS FOR IDEOLOGICAL EXTREMISM

Variable	Coefficient	Standard Error	Odds Ratio
Chamber	-0.755*	0.423	0.470
Rural	-1.047**	0.517	0.351
College Percent	-0.067	0.035	0.936
White Percent	0.050*	0.020	1.051
Social Security Percent	-0.035	0.028	0.966
College Degree by Legislator	-0.695*	0.420	0.499
Female Legislator	-0.064	0.409	0.938
Democrat	0.698	0.598	2.010
Model Chi Square (probability)	17.34 (.027)		
Sample size	90		

Note: *indicates significance at the .10 level, two-tailed test.

**indicates significance at the .05 level, two-tailed test.

We did not report the intercepts for the different levels of the ordinal dependent variable.

The division between the Democratic caucuses (the minority in both chambers) is even more pronounced. Almost two-thirds (65 percent) of the Democratic representatives are extreme liberals (3 or 4), but only 21 percent of Democratic senators are. The vast majority of senate Democrats are moderate liberals with 72 percent in the 1 or 2 score range. Clearly, the House is a much more divisive place.

To determine if these findings on the ideological extremity of the MMD House hold up when other variables are added to the equation, we estimated an ordered logistic regression model for the ideological extremism of an Arizona state legislator. Taking the absolute value of the ideology score as the dependent variable (ranging from a moderate at zero to an extremist at 4), we developed a model that included chamber membership, constituency characteristics, and legislator attributes.

As the results in Table 1 suggest, the chamber variable has a negative impact on ideological extremism. The chamber variable is coded so that the Senate equals 1 and the House equals 0 so the negative coefficient supports the hypothesis that the MMD system produces more ideological extremism. The odds ratio suggests that membership in the SMD Senate makes a legislator over 50 percent less likely to be an ideological extremist than a member of the MMD House.

Looking at the control variables, one can see that district characteristics have some impact. A rural legislator is less likely to be an extremist, but legislators from districts with a high percent of whites tend to be more extremist. On the other hand, the legislator's education is the only significant legislator attribute, and legislators with a college degree are less likely to be extremists. Neither party affiliation nor the legislator's sex affects ideological extremism. We do not intend to discuss the control variables in great depth, but it is important to point out that senate membership has a significant negative effect despite the presence of control variables.

The differences found across these various tests indicate a decided impact of the MMD system in the House versus the SMD system of the Senate. Consistent with theory, we find that the MMD system produces more ideologically extreme legislators.

DATA AND METHODS FOR THE VOTING MODELS

If the legislative delegation and party caucuses in the MMD House are more ideologically extreme than the SMD Senate, does it affect how legislators in the two chambers make decisions about policy? In particular, does ideology have a more decisive impact on legislative voting in the MMD House?

In their 1996 review article, Moncrief, Thompson, and Cassie (316-17) claim that "there has been precious little written on representation" and that "state legislative research . . . lags considerably behind congressional research" on legislative decisionmaking. Several studies have suggested the potential for applying congressional models of decisionmaking to state legislatures (MacRae 1952; Jewell 1982; Ray 1982; Witt and Moncrief 1993). In general, these studies have found fellow legislators, party, interest groups, and constituency interests influence legislative decisionmaking with some variation by the type of issue and salience (Herring 1990).

Other state level studies have focused on the importance of legislator characteristics in legislative decisionmaking (Flanagan, Cohen, and Brennan 1993) with a particular interest on the effects of gender on policy outcomes (Thomas 1991; Reingold 1992). Moncrief, Thompson, and Cassie (1996: 320) lament that "overall, the research on state legislative decisionmaking does not get the volume of attention given to other aspects of the legislature. Future concerns should be devoted to reviving this area of study and considering in greater detail the various factors that may influence decision making" at the state level.

To test how legislators represent the interests of their districts, we examine voting on higher education policy in the Arizona legislature. This allows us to identify the specific constituency characteristics influencing legislative voting on issues facing the public university system of Arizona. The University of Arizona, Arizona State University (ASU), and Northern Arizona University (NAU) comprise the state system, which is governed by the Arizona Board of Regents (ABOR). Universities, with their students, faculty, staff, and research, provide a significant economic impact to their city, county, and region, and we hypothesize that legislators are aware of constituent interests and act accordingly.

Our dependent variables are the votes of 60 House members and 30 senators on six bills considered during the 44th Arizona legislature.⁴ We pooled the votes from each chamber separately due to the small sample size for any single vote in the Senate, and then we tested for vote-specific differences by employing vote dummy variables in the model. None of the vote dummies were significant so we did not report them in the table. Further, we ran the pooled model for each chamber with one of the votes excluded to see if any significant changes in the coefficients occurred. We found no significant differences by dropping any of the bills.

Bills SB1065, SB1148, SB1081 and HB2657 were voted on in the first regular session in 1999, and all of them passed and were signed by the governor. SB1065 provided over \$4 million dollars to the University of Arizona for infrastructure improvements, and SB1148 funded a wastewater improvement project at NAU. SB1081 required state universities to establish performance based incentives programs, and HB2657 mandated that ABOR could not increase tuition without first having a public meeting to discuss the change.

The bills from the second session in 2000 are SB1079 and HB2284. Senate Bill 1079 gave \$1 million to NAU to improve its biology building, and it was passed by the legislature and signed by the governor. House Bill 2284, which was vetoed by the governor, would have provided \$2.5 million to ASU for infrastructure lease or purchase. The bill descriptions and votes were taken from the Arizona legislature's web page (ALIS). Because the votes are yes/no dichotomies, we employ logistic regression analysis to assess the factors that predict support of higher education in the Arizona House.

There are three categories of independent variables: constituency characteristics, legislator characteristics, and legislator ideology. Previous research has used differing constituency characteristics as predictors of legislative voting (Kau and Rubin 1982; Jackson and King 1989; Richardson and Munger 1990; Overby 1991; Wink, Livingston, and

Garand 1996). We employed four variables to test for the impact of constituency interests: median household income, percent of the district with a college degree, minority percentage, and percent of the district who are recipients of social security benefits.

The data for college education, median household income, minority percent and the percent of social security recipients were taken from *State Legislative Elections: Voting Patterns and Demographics* (Barone, Lilley, and DeFranco 1998). We hypothesize that the percent of the district with a college degree is positively related to votes in support of higher education. Legislators with highly educated districts may be more likely to support higher education because it is important to their constituents. Conversely, median household income is expected to be negatively related to higher education support. Higher income citizens may be more likely to oppose higher taxes to support education expenditures because they can afford to send their children to private universities or out-of-state institutions.

The constituency minority measure is the percentage of African-Americans, Hispanic Americans, Asian Americans, and Native Americans in a legislative district.⁵ It is difficult to predict the direction of the coefficient for the minority variable. Because whites typically experience higher levels of education, they may be more supportive of higher education but not necessarily public institutions. On the other hand, minorities may see public education as an equalizer that allows for greater economic opportunities. Therefore, we expect legislators from districts with a higher percent of minorities to be more supportive of public higher education.

Social Security percentage is the proportion of recipients of social security benefits in a district. Because elderly constituents are not as likely to benefit from higher education either directly (by going to school themselves) or indirectly (by paying for their children to go), it is hypothesized that the social security percent should be negatively related to support for higher education policy.

Several studies have found significant effects of legislator attributes in shaping legislative votes (Jackson and King 1989; Thomas 1991; Reingold 1992; Wink, Livingston, and Garand 1996). In our study we employ two individual legislator characteristics: sex and whether the legislator has a college degree. The data for legislator characteristics were

⁴ The votes for the six bills are as follows: SB1065 (House: 44 yeas and 11 nays; Senate: 26-4); SB1081 (House: 34-25; Senate: 25-5); SB1079 (House: 40-18; Senate: 26-3); SB1148 (House: 38-19; Senate: 23-6); HB2284 (House: 43-11; Senate: 29-0); and HB2657 (House: 43-17; Senate: 27-3). Because there was no variation on HB2284 for the Senate, it was dropped from the analysis.

⁵ Unfortunately for the state of Arizona, the Barone data set omits a category for Native Americans, and we know of no other data set for ethnicity by state legislative district. To compensate for this problem, we used county level census data and assumed that the percent of Native Americans was the same percent for each district or portion of a district in the county. For most of the counties, Native Americans make up less than 5 percent of the population, but there are a couple with half or more of the county population. If a district takes in 1000 people from a county with 50 percent Native Americans, we assume that the district has 500 Native Americans from that county. We then sum up each county's contribution to the district population (so 500 from county A and 400 from county B) and then determine the percent Native American for the entire district. This figure is then added to the overall minority percent. For the vast majority of districts there was a slight shift, but for a couple of districts the change was sizable.

≡ TABLE 2
LOGISTIC REGRESSION RESULTS FOR POOLED VOTES ON
HIGHER EDUCATION

Variables	House	Senate
College Percent	-0.014 (.027) .986	0.165** (.081) 1.180
Income	-0.001 (.003) .999	-0.014** (.006) .986
Minority Percent	-0.024* (.013) .977	0.042 (.031) 1.043
Social Security Percent	-0.012 (.020) .988	0.053 (.039) 1.054
College Degree by Legislator	0.147 (.267) 1.158	-0.897 (.632) .408
Female Legislator	0.346 (.251) 1.414	-1.251 (.901) .286
Ideology Measure	0.188*** (.057) 1.207	0.027 (.157) 1.028
Constant	3.515* (1.999)	3.535 (3.562)
Model Chi Square (probability)	23.39 (.025)	18.172 (.078)
% Correctly Predicted	70.7	87.2
Sample size	348	148

Note: *indicates significance at the .10 level, two-tailed test
**indicates significance at the .05 level, two-tailed test
***indicates significance at the .01 level, two-tailed test

The first value in the table is the coefficient. The second value (in parentheses) is the standard error, and the third value is the odds ratio.

The dummy variable for each vote is not reported, but none were significant.

taken from the *Guide to the 44th Legislature* published by the Arizona News Service (1999). First, the legislator's sex is a dummy variable with female equal to 1 and male equal to 0. Other studies have found that female legislators are more likely to support education (Thomas 1991; Reingold 1992). Second, the legislator's education level is a dummy variable (0 = some college or less; 1 = college degree or more). Legislators who are more educated are predicted to be more likely to support higher education.

A final independent variable is legislator ideology. Typically, studies at the congressional level employ a measure of interest group support, such as the ADA score for a legislator, as a proxy for ideology (Bullock and Brady 1983; Kalt and Zupan 1984; Peltzman 1984). While staying out of the debate about what the ideology measure tests (Dougan and

Munger 1989; Richardson and Munger 1990) or concerns about the ADA measure (Poole 1981; Fowler 1982; Snyder 1992), we test legislator ideology by using the additive scale of interest group support described above. We expect that liberals would be more likely to support public institutions of higher education. Considering the greater ideological extremism of the MMD House, does ideology have a greater impact on House decisionmaking?

VOTING MODELS

In this section, we seek to answer two questions related to representation in the Arizona legislature. First, which factors are significant in shaping legislative decisionmaking on higher education policy? Second, do the more ideologically extreme representatives in the multiple-member House use ideology differently than legislators in the single-member Senate?

In assessing the overall models (see Table 2), one can see that the logistic regression results are robust. The model chi-square for each is significant, and the percent correctly predicted range from 71 percent to 87 percent. Therefore, we can begin to assess the impact of each of the independent variables in the models.⁶

Examining the results for the Senate first, one can see that two of the constituency variables are significant and in the expected direction. First, consistent with expectations, the percent of the district population with a college degree is positively and significantly related to support for higher education. The odds ratio of 1.2 indicates that for each extra unit (or one percentage point) of the population with a college degree, the legislator is about 20 percent more likely to vote for higher education. Further, the median household income of the district is negatively related to support for higher education, which corresponds to our hypothesis. Higher income citizens may have less of a personal connection to public educational institutions, and this result supports that idea. Finally, the other two constituency variables (minority percent and percent of citizens receiving social security) were not significant.

The two legislator attribute variables do not attain significance, and both are contrary to expectations. We expected that because of personal experience a legislator with a college degree would be more likely to appreciate the functions and needs of a university and support those institutions. In this case, either personal experience works against the universities, or, more likely, constituency concerns are the overriding factor shaping decisionmaking. Also of some surprise,

⁶ In addition to the variables reported in table 1, partisan identification has been suggested as a determinant of legislative voting (Jewell 1981; Moncrief, Thompson, and Cassie 1996), but we chose to exclude it from the models. As Weisberg (1978: 564) argues, party is "a complex phenomenon composed of several influences." Therefore, party is somewhat of a catch-all that masks many of the factors that may influence a legislator's decision. We dropped the variable from the analysis for this reason, but interestingly party was not a significant factor even when we inserted it into any of the models. Because of concerns over parsimony and possible multicollinearity, we did not report the party variable.

the sex of the legislator is contrary to expectations. Others have found female legislators to be supportive of education, but it may apply more to elementary and secondary education for children (Thomas 1991; Reingold 1992). Often higher education competes for scarce resources with other state programs, such as elementary and secondary education, health care, and day care, which female legislators may value more.

Finally, the ideology measure is not significant for senators (and is far from approaching significance with a probability level of .86). The generally more moderate members of the SMD Senate do not use ideology to shape decision-making about higher education votes.

Conversely, examining the model for the ideologically extreme MMD House, one can see that the ideology measure is the only variable to attain significance at the .05 probability level. The odds ratio of 1.2 indicates that for each one-unit change in the ideology scale (toward liberalism), a legislator becomes 20 percent more likely to support higher education. This result stands in stark contrast to the Senate, and it is reinforced by the absence of other significant effects in the House.

None of the legislator attribute variables are significant in the House model, and the only constituency variable to approach significance (at the .10 level) is the minority percent. Districts with a higher percent of minorities are more likely to vote against higher education in the House. This result may be largely a matter of competition over funding. Arizona has an extensive community college system that is not a part of the ABOR system, and money that is directed toward ABOR schools may detract from the amount that could be spent on the community college system, which may have a greater impact on minority students. In addition, money spent on ABOR schools may affect the funding of other social spending programs that minorities may be more likely to support. Overall, constituency interests do not have much of an impact on Arizona House members.

The results suggest that constituency interests matter greatly in Senate decisionmaking but not much in the House. Further, legislator attributes do not significantly affect legislative voting decisions in either the Senate or the House. Finally, it appears that ideology is the dominant force shaping decisionmaking in the MMD House, but it is not a significant influence in the SMD Senate.

CONCLUSION

In this article we answer the call of Moncrief, Thompson, and Cassie (1996) who suggest that more research on representation needs to be performed at the state level. In particular, we compare representation in the multiple-member Arizona House to the single-member system of the Arizona senate, which allows us to test hypotheses regarding the impact of MMDs on ideological extremism. Arizona provides a particularly useful laboratory because the SMD Senate and the MMD House have identical district boundaries, residency requirements, age limits, and length of terms. Further, by examining models of vote choice, we are

able to test whether the unique institutional structure of Arizona translates into different voting patterns.

Downsian (1957) theory suggests that single-member districts will produce moderate legislators. In contrast Adams (1996), Cox (1990), and others (Dow 1998; Magar, Rosenbloom and Samuels 1998) suggest that in order to stake out a particular constituency, legislators in MMDs are driven to ideological extremes. Using several different measures, our findings support this hypothesis. Legislators in the MMD House are more likely than members of the SMD Senate to reside on the extreme ends of the ideological spectrum and much less likely to be moderates. These differences hold even when controlling for legislator attributes and constituency characteristics. In short, our findings confirm what has long been suspected—MMDs in the state legislature produce more ideologically extreme legislators.

Does this extremity have an effect on legislative voting patterns? Our examination of voting on higher education policy in Arizona suggests that it does. We find that legislators in the MMD House rely on ideology at the expense of other factors in voting on higher education policy. Conversely, senators in a SMD system primarily use constituency characteristics and not ideology to shape decision-making on higher education. This suggests powerful effects of the multi-member system.

Future research should continue investigating representation in the states as suggested by Moncrief, Thompson, and Cassie (1996). The states offer a myriad of opportunities to test and develop models of representation. Moreover, is it always the case that MMDs produce a different representational experience than SMDs? What are the implications of this finding? Further, are constituency characteristics as important for other less salient issues facing state legislators in SMDs? Is ideology always such a dominant force in multiple-member legislatures?

We believe that this article adds to the extant literature in several ways. First, we heed the call of Moncrief, Thompson, and Cassie (1996) to revive this area of study on state legislative decisionmaking. Second, we test whether multiple-member electoral systems produce more ideologically extreme legislative chambers and party caucuses in the chambers than single-member systems. Third, we apply models of decisionmaking that have been conducted almost exclusively for legislatures with single-member district systems to a legislature with multiple-member districts. Fourth, we find that not only is the multiple-member House more ideologically extreme, it uses ideology at the expense of constituency characteristics. Alternatively, the single-member Senate is just the opposite on both counts.

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