State Policy Mood: The Importance of Over-time Dynamics

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Abstract

Recently, we introduced and validated annual state-level estimates of the public's policy mood and party identification from 1956 to 2010 and self-identified political ideology from 1976 to 2010. In this issue, Berry, Ringquist, Fording, and Hanson (BRFH) compare our measure of policy mood with a measure they created, and they conclude that their measure is "the best available indicator of state policy mood for researchers doing pooled cross-sectional time-series analysis." In this article, we show that BRFH's skepticism of our measure and confidence in their measure result from a failure to fully consider over-time dynamics. When we consider over-time variation, the Enns and Koch measure of policy mood continues to perform well. By contrast, some concerning patterns emerge with the BRFH measure. In addition to further validating the Enns and Koch measure, this article speaks to similarities in opinion change across states and offers initial evidence of an over-time relationship between state policy mood and state spending priorities.

Keywords

ideology, public opinion, issue preferences, representation, public policy, survey research, methodology

For decades, scholars have worked to generate valid measures of the public's political preferences at the state level.¹ Recently, we aimed to contribute to this literature by generating annual state-level estimates of the public's policy mood and party identification from 1956 to 2010 and self-identified political ideology from 1976 to 2010 (Enns and Koch 2013). To generate these measures, we relied on multilevel regression

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and post stratification (MRP) of survey questions from nearly 500 different surveys with a total of more than 740,000 respondents. Our estimates of state policy mood also utilized Stimson's (1991) Wcalc algorithm to generate a single measure of policy mood from 73 different policy questions. To demonstrate the validity of these measures, we showed that they compare very favorably with data from 428 different state-level surveys; with comparable state-level estimates generated by Pacheco (2011) and Carsey and Harden (2010); with national-level estimates of partisanship (MacKuen, Erikson, and Stimson 1989), policy mood (Stimson 1991), and political ideology (Ellis and Stimson 2012); and with over-time patterns in a regional analysis of American National Election Study (ANES) data.

In this issue, Berry, Ringquist, Fording, and Hanson (hereafter BRFH) have tried to further assess the validity of our measure of state policy mood and to reassess their measure of policy mood, which relies on congressional candidates' issue positions to proxy citizen preferences. Although the BRFH measure has been critiqued for relying on elite behavior to estimate public preferences (Brace et al. 2004; 2006; 2007; Carsey and Harden 2010; Erikson, Wright, and McIver 2007, Norrander 2001), this measure has had a foundational influence on the study of state politics in the United States. Thus, we felt honored to have these scholars consider our measure of policy mood. We also took notice of their skepticism of our measure and their conclusion that the BRFH measure is "the best available indicator of state policy mood for researchers doing pooled cross-sectional time-series analysis" (Berry et al., this issue).

In the following pages, we show that BRFH's skepticism of our measure and confidence in their measure results from a failure to fully consider the over-time variation of these two measures. The lack of attention to over-time variation is surprising because this variation represents the defining contribution of the BRFH measure of policy mood (Berry et al. 2010; Berry et al. 1998; 2007a). As they explain in their original article, "our measures of state ideology display a substantial advantage over those formulated by Erickson [*sic*], Wright, and McIver (1993). Their measures are static, while ours are sensitive to annual changes in public opinion and elite views" (Berry et al. 1998, 343). Despite the importance of over-time variation, BRFH's only comparison of their measure with our measure relies on *static* correlations at four time points. As we show below, their static focus leads to very misleading conclusions. When we incorporate over-time variation into the analysis, our measure of policy mood continues to perform extremely well. By contrast, a focus on over-time variation highlights some concerning patterns in the BRFH measure.

Evaluating Over-time Measures

Public policy mood measures the public's support for government programs (particularly new deal/social welfare-type programs) on a liberal–conservative continuum (Erikson, MacKuen, and Stimson 2002; Stimson 1991). BRFH consider four state policies (tax collection, AFDC/TANF, Medicaid, and imprisonment rates) that they propose might reflect the public's policy mood at four points in time (1980, 1990, 2000, and 2008).² We focus our discussion on the first three policy areas because imprisonment rates have been shown to respond to the public's punitiveness (not the public's general policy mood; Enns 2013; 2014). For these three policies, BRFH report 20 cross-sectional correlations. Our measure of policy mood performs well, producing the expected relationship in 17 of these 20 correlations. Although these correlations support the validity of our measure, BRFH note that their measure performs even better, with expected relationships for all 20 correlations and a higher average correlation across the 20 analyses.³

It is not clear, however, what we should make of the strong correlations observed between the BRFH measure and these policies. As the BRFH measure is based on the issue positions of congressional candidates, the correlations between the BRFH measure and state policy outcomes may be inflated (Brace et al. 2007; Erikson, Wright, and McIver 2007).⁴ Another concern with BRFH's comparison of the two measures of policy mood is that their analysis ignores the most important aspect of these measures—over-time dynamics. To address this concern, we consider the over-time relationship between the two measures of policy mood and the three issue areas BRFH analyzed that might reflect policy mood-the state tax revenue rate (1956-2010), AFDC/TANF benefits for a four-person family (1980–2010), and state health expenditures (1977–2010).⁵ We also consider Jacoby and Schneider's (2009) measure of state policy spending priorities (1982–2005), which captures the extent to which states prioritized spending on policies most likely to benefit those in need, such as welfare, hospitals, and health care, versus policies that are more likely to benefit all segments of society, such as highways, education, parks, and law enforcement. Given our interest in policy mood, this measure is advantageous because it offers a general indication of how much each state prioritizes redistributive/social welfare-type policies.6

The policy variables are all nonstationary (we cannot reject the null hypothesis of a unit root), and we find evidence of a cointegrating relationship between tax revenue rates, welfare benefits, and policy priority scores and the mood variables. Thus, to analyze these over-time relationships, we estimate error correction models (De Boef and Keele 2008; Enns, Masaki, and Kelly 2014). Because we do not find evidence of cointegration for health expenditures, we estimate a first differences model (see Online Appendix 2 for a full discussion of these models). As the goal is only to evaluate whether expected associations emerge, like BRFH, we do not include control variables in the models. We do, however, include state fixed effects, which is a common approach used in cross-sectional time-series models to identify over-time (within state) relationships (e.g., Berry, Fording, and Hanson 2003; Berry et al. 2013; Berry et al. 2007b; Fording and Berry 2007).⁷ The policy measures appear to follow a linear trend, so we also control for a trend in the model. We estimate panel corrected standard errors (Beck and Katz 1995).8 All variables are coded so higher values correspond with increased liberalism, so if state policy follows public policy mood in the states, we should observe positive relationships.

Figure 1 presents the estimated over-time relationships (and 95% confidence intervals) between the policy variables and our measure of policy mood (Model 1), the BRFH measure (Model 2), and both measures when included in the same model (Model 3). To aid comparison, both mood variables have been scaled to range from 0





Note. Both mood variables have been scaled to range from 0 to 1. Panels a, b, and d report the long run multiplier from Error Correction Models. Panel c reports the results from a first difference model. Full results are reported in Table A-1 in Online Appendix 2. BRFH = Berry, Ringquist, Fording, and Hanson.

to 1. The estimates from error correction models (Panels a, b, and d) are based on the long run multiplier (LRM), which captures the total expected change in the dependent variable (across future time points) for a unit shift in policy mood. The estimates in Panel c, based on a first differences model, reflect a short-term relationship. Full results appear in Table A-1 of Online Appendix 2.

The top left panel presents the results for per capita state tax revenue. The negative and nonsignificant coefficients across all three models suggest that increases in state policy mood liberalism do *not* correspond with greater state tax revenue. The lack of relationship may stem from the fact that state tax revenue is highly dependent on the state economic climate, not the public's preferences. Alternatively, tax revenue may reflect specific preferences about taxation (not policy mood in general), or the policies associated with varied tax revenue sources (e.g., property tax, income tax, sales tax, corporate tax, alcohol and tobacco tax, licensing fees) may respond to the public's preferences in distinct ways. The top right panel considers welfare benefits. None of the estimates reach statistical significance, but the estimates across models are very similar and of substantial magnitude. Although imprecisely estimated, for both measures of policy mood, these results are consistent with an expected increase of about \$200 in welfare benefits (for a family of four) for a shift from the most conservative to most liberal state policy mood. The bottom left panel (c) estimates the relationship between changes in mood and changes in health expenditures.⁹ None of the estimates are statistically different from zero, though we note that the coefficients associated with our measure are in the expected positive direction, and those associated with the BRFH measure are in the negative direction.

The bottom right panel (d) reports the results for state spending priorities. When analyzed separately, both measures of policy mood are positive and statistically significant, though the LRM associated with our measure is about double the LRM based on the BRFH measure. When both measures are included in the same model (Model 3), the estimated relationship for our measure is about 4.5 times as large as the estimated relationship for the BRFH measure. This is an important result because out of the four analyses, state spending priorities are closest to the concept of policy mood.

In sum, two patterns stand out in Figure 1. First, it appears that the over-time relationship between policy mood and various measures of state policy is quite varied. Of course, the absence of a relationship between mood and a specific policy does not necessarily imply that public opinion does not matter. It may be that these policies reflect the public's issue-specific preferences or even the public's symbolic (i.e., selfidentified) political ideology instead of general policy mood. Second, the two measures of policy mood perform quite similarly.¹⁰ We believe these results and the fact that the Enns and Koch measure is based on the public's expressed preferences (as opposed to the BRFH measure's reliance on congressional candidates' issue positions) further support the use of our measure.

Regional Variation

BRFH also raise questions about the regional variation in our estimates of state policy mood. Consistent with their expectations, they find that the northeast states are the most liberal according to our measure of policy mood. Yet they express surprise that our measure does not reflect more regional variation. As the true values of state policy mood are not observed, we cannot know the correct amount of regional variation. However, often this cross-sectional variation is of secondary interest to researchers. The standard approach of including state fixed effects in cross-sectional time-series models (e.g., Berry, Fording, and Hanson 2003; Berry et al. 2013; Berry et al. 2007b; Fording and Berry 2007) means that most analyses focus explicitly on over-time (within state) relationships.¹¹ To illustrate the importance of considering over-time dynamics when making regional comparisons, the left panel of Figure 2 plots the average policy mood (weighted by population size) as measured by us and BRFH for southern states.¹² Higher values indicate more liberal policy mood, and the two measures of policy mood



Figure 2. Enns and Koch and BRFH Measures of Policy Mood for Southern States, 1956 to 2010 (a) and the Average Welfare Benefit in Southern States, 1961 to 1990 (b). *Note.* BRFH = Berry, Ringquist, Fording, and Hanson.

are plotted on separate axes to aid comparison. Our measure shows the South becoming more conservative, which is consistent with the increasingly Republican south during the period (Abramowitz and Saunders 1998; Lublin 2004) and with the conservative southern opinion shift we document in ANES data in our original article. The BRFH measure, by contrast, indicates that the public's policy mood in the south became increasingly *liberal* from the mid-1960s to the mid-2000s.

To gain a further sense of whether we should expect Southern policy mood to become more liberal or conservative during this period, the right panel of Figure 2 plots the average maximum monthly AFDC payment (in real dollars) in southern states for a family of four (with no income) from 1961 to 1990. The data come from Berry, Fording, and Hanson (2003).¹³ Although many factors could influence the amount of welfare benefits, the declining benefits between 1961 and 1990 are consistent with our estimates of an increasingly conservative policy mood. The correlation is r = .77. By contrast, welfare policy moved *opposite* the BRFH measure, with a correlation of r = -.72. The increasingly liberal BRFH scores for southern states are difficult to reconcile with the evidence that politicians and policies have become more conservative in these states.

BRFH also express concern that our estimates of policy mood are too highly correlated across states. Because different income groups and political sophistication levels typically update their policy mood in tandem (Enns and Kellstedt 2008; Enns and Wlezien 2011; Erikson, MacKuen, and Stimson 2002; Kelly and Enns 2010) and because of Page and Shapiro's (1992) overwhelming evidence that these "parallel publics" apply to geographic groups, we were not surprised by the over-time similarities across states. BRFH, however, conclude that the correlation of r = .86 between our policy mood score in Alabama and that of Massachusetts is "implausible." Given our divergent priors, to assess the plausibility of this correlation (or lack thereof), we

turned to recent over-time estimates of state policy preferences generated by Pacheco (2014). Pacheco's estimates include two important indicators of policy mood, support for government spending on welfare and spending on education, and an important determinant of policy mood, consumer sentiment (Durr 1993).¹⁴ The correlations between public attitudes on these issues in Alabama and Massachusetts are r = .63, .89, and .95, respectively. Based on these correlations, our correlation of r = .86 is *not* implausible but rather very much in line with what we should expect.

Conclusion and Recommendations

In 2007, Berry et al. concluded,

If, at some point, a better direct annual measure of policy mood (based on survey responses reflecting attitudes about public policy issues or some other methodology not yet envisioned) is developed, we would favor using this measure over our less direct proxy. (p. 127)

As we demonstrated in our original article (Enns and Koch 2013) and again here, we have done precisely this.¹⁵ In addition to our measure of policy mood (and our measures of political ideology and partisanship), a host of over-time state-level measures of specific policy preferences are also now available (Enns 2013; Pacheco 2011; 2014; Shirley and Gelman 2015), and new methods of estimating state opinion dynamics continue to emerge (Caughey and Warshaw, 2015). Anyone interested in representation, public opinion, and state politics is indebted to Berry et al. for the advancements made possible by their measure of citizen preferences, but it is time for them to heed their 2007 advice and to begin favoring these direct measures of state public opinion.

In addition to further validating our measures, some important implications for understanding state opinion have emerged. Despite Page and Shapiro's (1992) overwhelming evidence of "parallel publics," scholars continue to underestimate the prevalence of parallelism in the public's attitudes. The strength of parallelism differs across issues (Pacheco 2014), but similar patterns of opinion change across states is the norm (Enns and Koch 2013; Pacheco 2014). These similarities hold important implications for how we understand the causes and consequences of opinion change. We also saw evidence of an over-time relationship between public policy mood and state spending priorities, and a lack of relationship between policy mood and tax revenues. Because these analyses were only designed to assess bivariate associations, further research should be done to explore the potential opinion–policy links.

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Authors' Note

We would also like to note that during this exchange, we learned of Evan Ringquist's passing. We were terribly saddened to learn this news. Neither of us ever had the chance to meet Professor Ringquist, but we have been greatly influenced by his scholarly work and his reputation for being an outstanding mentor, colleague, and person. The online appendix and all data and materials necessary to reproduce the numerical results are available on these websites: http://falcon. arts.cornell.edu/pe52/ and https://dataverse.harvard.edu/dataverse/enns.

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Notes

- See, for example, Berry et al. (1998); Brace et al. (2004); Carsey and Harden (2010); Erikson, Wright, and McIver (1993); Lax and Phillips (2009); Norrander (2001); Pacheco (2011); Park, Gelman, and Bafumi (2004); Weber et al. (1972); Wright, Erikson, and McIver (1985).
- 2. Surprisingly, BRFH also compared our measure of policy mood with Erikson, Wright, and McIver's (1993) measure of ideological self-identification. We found this comparison surprising because BRFH have critiqued such comparisons in the past, calling them "irrelevant" because policy mood and self-identified ideology are distinct concepts (Berry et al. 2007b, 163). Indeed, when we compare our measure of self-identified ideology with Erikson, Wright, and McIver's (1993) measure, strong positive correlations emerge.
- 3. BRFH also report static comparisons with comparable measures generated by Carsey and Harden (2010) and Caughey and Warshaw (2015) for 2004, 2006, and 2008. Again, our measure performs well. The average correlation between these measures and the BRFH measure, and with our measure is r = .76 and .64, respectively. Also see, Enns and Koch (2013, 355–56 and 366–67), where we find strong correlations between our measures of policy mood, ideology, and partisanship and related measures from Carsey and Harden (2010) and Pacheco (2011).
- 4. This concern stems directly from BRFH's measurement assumptions. According to BRFH, their measure assumes that, "The mean ideological position of the members of a party in a state's legislature is similar to the mean position of the party's U.S. Representatives and Senators" (1998, 339). Unless *all* these similarities result from common responses to public opinion, endogeneity concerns exist.
- 5. All three variables are measured in real dollars. See Online Appendix 1 for a discussion of and links to all data.
- 6. We reversed the coding of Jacoby and Schneider's (2009) measure, so higher values correspond with prioritizing redistributive policies.
- 7. Nickell (1981) has shown that including fixed effects with dynamic models introduces bias, but when $T \ge 20$ (as is the case here), the bias is small, leading Beck and Katz (2011, 342) to recommend the inclusion of fixed effects. However, to ensure that the results are

not sensitive to this modeling decision, the online appendix reports all analyses *without* fixed effects.

- 8. Omitting the trend or estimating Bootstrap Corrected Standard Errors (BCSE; Harden 2011; 2012) does not substantively alter the results. In fact, our measure of policy mood performs even better when the BCSEs are estimated (see Online Appendix 3).
- 9. The expenditure data correspond with the fiscal year, which begins on July 1 of the previous year (in all states but four). Governors typically submit a budget to the legislature in January of the previous year. Because mood follows the calendar year, we lag mood by 2 years. Thus, a shift in mood from 1999 to 2000 is allowed to influence governors' and legislators' decisions in the first half of 2001, which would determine the budget from July 2001 to June 2002.
- 10. Although the point estimates from the Enns and Koch measure are more in line with expectations, the confidence intervals always overlap.
- 11. However, if a researcher was only interested in cross-sectional relationships or if the number of years available for analysis was small, *and* if the researcher had reason to believe the endogeneity concerns with the BFRH measure (e.g., Erikson, Wright, and McIver 2007, 142–49; and Footnote 4 above) do not apply to the specific application, the cross-sectional properties of the BRFH measure would be advantageous.
- 12. Following BRFH, we focus on the 11 states of the Confederacy, South Carolina, Florida, Alabama, Georgia, Mississippi, Louisiana, Texas, Virginia, Arkansas, Tennessee, and North Carolina.
- 13. We do not combine the data from this early time series with the welfare data analyzed above because the measures are not directly comparable. For example, the state AFDC payments in the Berry, Fording, and Hanson (2003) data range between \$250 below (Oregon) and \$25 above (Kentucky) the corresponding state welfare benefits in the University of Kentucky Center for Poverty Research data. These differences do not challenge the validity of either measure, but they do suggest that the two measures should not be combined.
- 14. Pacheco's (2014) measure of state welfare support ranges from 1974 to 2000, education support ranges from 1975 to 2000, and consumer sentiment ranges from 1986 to 2011.
- 15. Of course, we agree that our measure can continue to be improved, and we support all efforts to do so.

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