Ideology in the European Mass Public:
A Dynamic Perspective

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Abstract

The study of representation, electoral dynamics, and public opinion in Europe requires a scale of the public’s latent ideology that is comparable across time and space. However, European public opinion polls rarely include enough questions in a given domain to apply scaling techniques such as IRT models at the individual level. As a result, there are no existing measures of latent ideology in Europe that are based on survey responses. In this paper, we use a Bayesian group-level IRT to develop the first measure of policy ideology that is comparable both across European countries and across time. We find that countries within Europe have become relatively polarized over time, and that patterns of ideology are starkly different across dimensions. We show that our findings are consistent with the previous literature on European public opinion, but correlate poorly with existing uni-dimensional measures of ideology that are not derived from survey data. Taken together, our findings suggest caution in applying uni-dimensional concepts to compare ideology across European countries and regions. Our measures of the mass public’s ideology in Europe enable scholars to address a wide variety of substantive questions in comparative politics.

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1 Introduction

How do the mass publics of European countries differ ideologically from one another? How have they changed ideologically over time? How does this ideological variation affect election outcomes and policy outputs? Do some political systems and institutions foster greater responsiveness to mass opinion? How do citizens react ideologically to political crises, economic shocks, and other dramatic events? These questions are central to the field of European politics and to political science more generally. Our capacity to answer them, however, has been hamstrung by the limitations of available data on the mass public’s ideology. In particular, scholars have lacked access to general summaries of citizens’ political preferences that are comparable across countries and over time.

Ideally, European scholars require something that is measured in a similar way to “policy mood” in the US. Measures like this combine many survey questions into a scale to assess the overall desire for smaller or larger government, ensuring that they directly measure real policy opinions, while also harnessing the large reductions in measurement error that come from combining multiple measures of the same latent construct (Ansolabehere, Rodden, and Snyder 2008; Stimson 1991; Durr 1993; Stimson, Mackuen, and Erikson 1995). The key problem in Europe is that we lack survey questions that are repeated regularly over time and across countries (Kim and Fording 1998). Surveys such as the European Social Survey and the various modules of the International Social Survey Program are carried out only sporadically, and even then, few questions are asked repeatedly over long periods of time. Instead, indirect measures of ideology, such as median voter positions derived from parties’ ideologies, have been widely used in applied work. Unfortunately, as we discuss below, they

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1. As is discussed below, however, we measure a concept that is slightly different to “public policy mood.” In Europe, policy mood measures that are similar to the American studies have recently been developed for the UK, France and Germany (Bartle, Dellepiane-Avellaneda, and Stimson 2010; Stimson, Thiebaut, and Tiberj 2012; McGann 2014; Munzert and Bauer 2013). However, these are of limited use in tackling comparative questions, since they are measured using entirely different survey items in different countries.
have a number of serious drawbacks in assessing ideological change and representation.

In this paper, we develop the first long-run measures of ideology at the level of European
countries that are constructed from public opinion data. To do so, we use a new dynamic
group-level item-response model (Caughey and Warshaw 2015). It estimates ideology at the
level of groups rather than individuals, and then partially pools data both cross-sectionally
and across time to help estimate these group means. These innovations allow us to estimate
countries’ ideologies from the existing cross-country surveys, even when survey questions are
repeated only rarely and inconsistently, and with different countries included at different
times.

We apply the model to a new dataset we have constructed for Western Europe from
1990 to 2012 that combines every available cross-country survey over the period. We group
questions into three broad categories that capture the key dimensions of political conflict
and ideology in contemporary Europe²: First, there is the classic left-right divide over the
size of government and its role in mitigating inequality. Second, there is an increasingly im-
portant cultural dimension that incorporates postmaterialist concerns over the environment
and gender equality, social concerns such as abortion and gay marriage, and a libertarian-
authoritarian divide. And third, there are issues of nationalism, identity and immigration³.

Our main substantive finding is that countries within Europe have become relatively
polarized over time, and that patterns of ideology are starkly different across dimensions.

At the beginning of our period, European countries were relatively homogenous in their

². In future versions of this paper, we plan to further evaluate whether these are the best ideological
categories, and whether it is possible to summarize public opinion in a lower-dimensional space.

³. There is an open debate about how many dimensions of conflict there are in contemporary Europe; most
authors conclude that there are at least two, often placing immigration and postmaterial issues in the same
al. 2006; Stubager 2010). Our division into three areas of conflict is partly driven by theoretical expectations
that opinions on immigration and social issues may not always be well-correlated across countries, and partly
by the eventual data: we found that patterns of opinion about immigration are not completely the same
as for other social issues, as shown below. Such a division is also in line with Kitschelt and Rehm’s recent
work, who call the three dimensions ‘greed, grid and group’ (Kitschelt and Rehm 2014). In future work we
may explore combining the two non-economic dimensions.
ideologies on social issues, but over time, Scandinavian and most other Northern and Central European countries have become much more socially liberal than outlying countries. On immigration, meanwhile, a similar polarization has occurred, but only a tiny handful of countries have trended in the socially liberal direction. And on economic issues, Scandinavian countries stand out as the most conservative and Southern Europe as most leftwing, with this gap also growing over time. Taken together, our data suggest caution in applying uni-dimensional concepts to compare ideology across European countries and regions. We also show that our measures across all three dimensions correlate very poorly with the rankings implied by current, non-survey-based measures of ideology, but are strongly consistent with past findings and theories in the public opinion literature. This suggests that applying measures such as median voter scores in applied work may be problematic, insofar as they are used to capture ideological differences.

Below, we begin by briefly explaining the need for survey-based measures of ideology and discussing some potential pitfalls of current alternatives. We then introduce our data, and explain the problems caused by sparseness across time and countries. Next, we outline our model, and how it deals with these issues. Then, we introduce our main results, showing patterns of opinion across countries and regions in Europe and how these patterns have evolved over time. We also evaluate how well-correlated countries’ positions on the three dimensions are. After that, we compare our results to past domain-specific measures from the public opinion literature, as well as to the two existing indirect measures of ideology. In the final section, we briefly conclude.

2 Measuring Voter Ideology in Europe

Our aim is to construct measures of opinion that combine multiple policy issues onto low-dimensional scales. Such aggregated measures are needed for studying both representation
and ideological change. Parties combine many issues into platforms, and can be compared along dimensions such as a left-right spectrum. Voters’ opinions need to be aggregated and scaled along the same dimension(s) as parties to evaluate how closely parties represent them. And when assessing ideological change amongst voters, opinions on individual survey items are often unstable and incoherent, performing poorly in explaining voting (Converse 1964). Latent constructs such as ideology are better measured with combinations of multiple measures, which have much lower measurement error, and are strongly correlated with vote choices (Evans, Heath, and Lalljee 1996; Ansolabehere, Rodden, and Snyder 2008). More broadly, political conflict revolves around clashes of overall ideological worldviews rather than single issues, and aggregation allows us to assess the nature and number of dimensions of conflict (Kim and Fording 1998; Jost, Federico, and Napier 2009; Stimson, Thiebaut, and Tiberj 2012).

Latent scales of political ideology that are comparable over-time and across geographic space have been developed in the United States (Stimson 1991; Caughey and Warshaw 2015), as well as in several individual European countries (Bartle, Dellepiane-Avellaneda, and Stimson 2010; Stimson, Thiebaut, and Tiberj 2012; McGann 2014; Munzert and Bauer 2013). However, the sparse availability of survey questions across time and space has prevented the development of aggregated measures that put voters’ ideology on a common scale across European countries. Instead, two other methods have been widely used to infer voters’ general ideology without relying on survey opinion questions. The first uses a single cross-country survey question from the Eurobarometer and the Comparative Study of Electoral Systems project that asks respondents to place themselves on a ten-point scale from left to right (Knutsen 1998; Adams et al. 2006; Golder and Stramski 2010). This is the only public opinion question that has been asked regularly and consistently across Europe and over time. The mean of this scale in a country-year is used as a measure of voters’ ideological position. The second method is more indirect; it is based on data on party positions from
the Comparative Manifestoes Project (Kim and Fording 1998, 2003; De Neve 2011). The latter uses expert coding of party election manifestoes to place parties on a single left-right scale. Making the standard assumptions of spatial a models, the median of this scale in any country-year (weighted by parties’ vote shares) is equal to the ideological position of its median voter[1] Until now, these measures have been the only ones available to applied researchers, and so they have been understandably popular. Unfortunately, however, they have a number of drawbacks compared to measures of voters’ ideology that are based on survey questions.

First, it is unclear that left-right self-placements properly capture voters’ latent ideology. Respondents’ degree of symbolic identification with the labels “left” and “right” is not necessarily the same thing as their stance on policy questions (Ellis and Stimson 2012). Only a minority of voters know what sorts of policies are associated with these labels (Klingemann 1979). And although issue opinions do have some influence on self-placement, partisanship and social identity are usually much more strongly related to it. Moreover, many people heuristically adopt the label of their favorite party for themselves, and their positions are influenced by their degree of social identification with leftwing and rightwing people (Inglehart and Klingemann 1976; Conover and Feldman 1981; Huber 1989; Miller 1992; Knutsen 1997; Medina 2013). The scale’s assumption of unidimensionality is also problematic. People who are “cross-pressured”—economically conservative but socially liberal, for example—often label themselves as centrist, despite holding opinions that are far from moderate (Treier and Hillygus 2009).

The median voter method, meanwhile, relies on the demanding assumptions of spatial voting. It assumes that voters vote for the party closest to them ideologically, rather than on the basis of long-standing loyalty, retrospective or prospective performance in office, or on

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4. This approach is similar to a widely used measure of state-level ideology in the United States that was developed by Berry et al. (1998) based on a weighted average of the scaled roll call votes of elected officials.
non-ideological characteristics of candidates. These conditions are very unlikely to be met entirely. Simulations suggest that these factors can lead to very large deviations from true positions (Warwick and Zakharova 2012). The danger is that rather than capturing ideology, the median voter measure simply estimates the popularity of different parties, based on a variety of different types of voting behavior.

Another drawback of both methods is that they contain significant amounts of measurement error. Large response scales such as the ten-point left-right measure are complex for survey respondents to understand. “Differential item functioning” often occurs, where two respondents with the same underlying opinion give different responses simply because an “8” or “9” mean different things to different people (Krosnick and Presser 2010; Lo, Proksch, and Gschwend 2013). In particular, less politically sophisticated people find it harder to interpret the scale, and on average tend to select centrist positions that do not agree with their issue positions (Knutsen 1998). The comparative manifesto project (CMP), which underlies the party positions estimated in the median voter measure, has also been strongly criticized for inaccurate measurement. Each manifesto has been coded by only one human coder, and the estimates do not come with accompanying measures of uncertainty (Benoit and Laver 2007). Work using multiple coders to examine the manifestoes shows that inter-coder agreement is low, and that the potential for misclassification in the left-right positions is very high (Mikhaylov, Laver, and Benoit 2012).

Both measures are also unsuitable for making comparisons over time. Many scholars argue that European politics is characterized by more than one dimension of conflict, and a number of studies conclude that the second cultural dimension has risen in importance over time (Kitschelt 1994; Kriesi 1998). But the two existing measures of ideology only cover one dimension. This means that even if they do accurately reflect aggregated opinions on political issues, the single-dimension measures are not comparable over time, since their meaning has changed over time, incorporating new issues (Knutsen 1995; De Vries, Hakhverdian, and
Additional problems arise for the median voter model whenever the set of issues that matter for spatial voting changes over time.

Finally, comparability across countries is problematic too. The cultural dimension is more important in some countries than others, meaning that summary measures of ideology will measure opinions on different sets of issues in different countries (Knutsen 1995). The problem of differential item functioning in left-right scales is compounded by this issue. People from different cultures are especially likely to interpret the same scale in different ways: “left” and “right” mean different things in different places (Thorisdottir et al. 2007). And they may label themselves relative to their own country’s political center, so that a “3” in the UK is not necessarily the same as a “3” in Sweden (McDonald and Budge 2005). For the median voter model, positions can be difficult to compare cross-sectionally simply because voting behavior differs. For instance, it may capture ideological closeness to parties better in PR systems than in first-past-the-post systems, since strategic voting is more likely to occur in the latter. For all of these reasons, we now move on to developing our own measure of latent opinion in Europe that is comparable both cross-sectionally and longitudinally.

3 Data on Political Preferences of European Mass Publics

3.1 Datasets Used in Our Model

The datasets used in our models combine survey questions from all of the existing large, cross-national surveys in Europe, including the European Social Survey, various modules of the International Social Survey Program, the European Values Survey, and some special editions of the Eurobarometer. We group them into three broad categories to capture ideology across three dimensions. First, there are economic issues, including redistribution, government intervention in the economy, welfare and social policy, inequality and the size of government. This dimension captures respondents’ ideological preference for government
action to soften the effect of free markets: the most classic definition of left-right ideology. Second, there are postmaterial and social issues (including the environment, gender equality, social issues and libertarian-authoritarian divides). Third, there are issues of immigration and nationalism. All questions were re-coded so that higher values on the relevant scales indicate more conservative opinions. That is, higher values indicate that the respondent favored smaller government and less redistribution, wanted less action on the environment and held traditional views on social issues, or opposed immigration and favored nationalist positions.

For inclusion in our models, a survey question had to fulfill a number of criteria. Questions had to be asked in more than one year and more than one country, enabling us to compare across time and countries. We also restricted our model to questions that asked about desired policy outcomes in the abstract, or about ideological issues that are directly relevant to assessing desired policy outcomes, excluding questions that reference the policy status quo. For example, we would include questions that ask whether the government should redistribute income, or whether the recipients of redistribution are deserving, but not questions that ask whether the government should redistribute more than it currently does. This ensures that we measure genuine ideology that is comparable in its own right over time. It is distinct from measures of the “public policy mood” such as Stimson (1991) that look at the public’s desire for more or less of specific policies, which can shift in response to government policy rather than reflecting ideological change (Soroka and Wlezien 2005; Caughey and Warshaw 2015).

Data cover the period 1990-2012 for the economic and postmaterialist scales, and 1999-2012 for the immigration scale. In each case, it was not possible to run the models earlier, because data becomes too sparse, both over time and across countries. Questions on immigration were particularly sparse, forcing us to begin estimation in 1999. In addition, we restrict our attention to 18 Western European countries, which share similar political cul-
tures, levels of economic development, and political institutions. This allows us to delve into ideological differences between European countries; including Eastern European countries would mean that most of the variation is between East and West. More broadly, and in keeping with the recent literature on attitudes to social policy, immigration and postmaterial concerns, our primary interest is in ideological trends and diversity among the relatively settled democracies. This is because social policy is much more developed in these places, immigration into Eastern Europe is relatively rare, and postmaterial concerns are thought to come to the fore much more when countries become wealthier.

3.2 The Problem of Sparse Survey Data

Our dataset for economic issues contains 476,577 individual responses to 57 questions, while the postmaterial and immigration scales contain 36 questions and 391,460 responses and 17 questions and 302,499 responses respectively. They provide a rich portrait of Europeans’ political preferences, but they are difficult to scale or summarize due to the sparse and uneven distributions of survey questions across countries and years. These challenges have largely stymied previous efforts to develop measures of public opinion in Europe on a common latent scale.

Figure 1 shows the coverage of questions over time in our datasets. It illustrates that survey questions in Europe have almost never been repeated consistently across years, and that many years feature only a handful of relevant questions. This presents four key challenges for measuring over-time ideology. First, a naive model of ideological change would become impossible to interpret when data are very sparse. Suppose, for example, that we simply measured conservatism in each available year by taking the proportion of left- or rightwing responses across all questions asked in that year. Such a measure would be sensitive to differences in baseline support across questions when questions appear unevenly.

Only 3% of respondents in our economic issues dataset, for example, disagreed with the
Figure 1: Coverage of Questions in the three datasets

(a) Economic Issues
(b) Post-material and Social Issues
(c) Immigration and Nationalism

Note: Each square represents the appearance of a given question in a given year in the relevant dataset

statement that “it should be the government’s responsibility to provide healthcare for the sick,” but 20% disagreed that “it should be the government’s responsibility to provide a decent standard of living for the unemployed.” For these two questions, it happens to be the case in reality that they were asked in the same survey and year. This means that the lower opposition to government-provided healthcare for the sick must be due to the fact that equally conservative respondents find it more difficult to oppose than government benefits for the unemployed. Suppose, however, that the two questions had been asked separately in different survey-years, and we tried to use the percentage disagreeing with each one as a measure of conservatism in each year. Then, we could not tell whether the difference in opposition was due to ideological change, or to differences in how conservative someone
would have to be to disagree with the two statements. Unfortunately the uneven spacing of
questions with different baseline support is the rule rather than the exception in our data.

Second, as mentioned earlier, when measuring a latent construct such as ideology, mul-
tiple survey questions need to be combined in order to reduce measurement error (An-
solabehere, Rodden, and Snyder 2008). Scaling techniques such as factor analysis require
many survey questions per individual in order to construct a measure for each person. But
our dataset often features only a handful of questions per respondent at best.

A third challenge is that some years are missing entirely from our data or feature only
one or two questions in total (Figure 1). This means that a naive model would produce no
estimates at all for these years (in the case of wholly missing data), or that our estimates
would be very unstable and sensitive to the actual questions asked (in the case of only one
or two questions).

Finally, Figure 2 shows that, in the early portion of the time period some countries
appear only rarely or not at all. A naive model would be unable to make any inferences
about ideology in those country-years, meaning that we would miss important parts of the
story about structure and change in Europeans’ ideology. It would also greatly reduce the
number of observations available for substantive analyses. This is, of course, similar to the
familiar problem of missing responses within a given survey. Indeed, as we explain below,
one way of thinking of our model is that in years where data are very sparse or non-existent,
it imputes the missing data in a similar fashion to multiple imputation procedures, which
are sometimes used to alleviate missingness in individual datasets.

Overall, these four challenges arising from the sparsity of data across time and countries
have prevented scholars from estimating measures of European ideology from surveys. Our
model addresses each of these challenges in order to estimate European ideology on a common
scale across countries and over time.
Figure 2: Coverage of Countries in the three datasets

(a) Economic Issues

(b) Postmaterialist and Social Issues

(c) Immigration and Nationalism

Note: Each dot represents the appearance of a given country in a given year in the relevant dataset
4 Dynamic Group-Level IRT Model of Latent Ideology

We begin by adopting the general framework of item-response theory (IRT). In an IRT model, respondents’ question responses are jointly determined by their score on some unobserved trait—in our case, their domain-specific conservatism—and by the characteristics of the particular question. The relationship between responses to question \( q \) and the unobserved trait \( \theta_i \) is governed by the question’s threshold \( \kappa_q \), which captures the base level of support for the question, and its dispersion \( \sigma_q \), which represents question-specific measurement error. Under this model, respondent \( i \)’s probability of selecting the conservative response to question \( q \) is

\[
\pi_{iq} = \Phi \left( \frac{\theta_i - \kappa_q}{\sigma_q} \right),
\]

where the normal CDF \( \Phi \) maps \((\theta_i - \kappa_q)/\sigma_q\) to the \((0, 1)\) interval\(^5\). The model assumes that greater conservatism (i.e., higher values of \( \theta_i \)) increases respondents’ probability of answering conservatively. The strength of this relationship is inversely proportional to \( \sigma_q \), and the threshold for a conservative response—which, continuing the example earlier, should be higher for healthcare for the sick than for benefits for the unemployed—is governed by \( \kappa_q \). Estimating the relationship of each question to the latent trait in this way allows the model to overcome the first challenge outlined above, reducing the model’s sensitivity to which questions are asked when.

As discussed above, the fact that each respondent answers no more than a few questions (sometimes only one) prevents us from using an IRT model to estimate the conservatism of individual respondents. Our ultimate interest, however, is not individuals but rather aggregates such as national publics. We therefore instead estimate a group-level IRT model, building on the work of Mislevy (1983), McGann (2014) and particularly Caughey and

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\(^5\) This exposition assumes dichotomous response choices; we deal with ordinal choices below. A common alternative way of writing the model in Equation (1) is \( \Pr(y_{iq} = 1) = \Phi(\beta_q \theta_i - \alpha_q) \), where \( \beta_q = 1/\sigma_q \) and \( \alpha_q = \kappa_q \times \beta_q \).
Warshaw (2015). The focus of this model is estimating the average conservatism $\bar{\theta}_g$ in each subpopulation $g$ (e.g., men and women in each country), for which there are many observations in a given survey. Under the assumption that $\theta_i$ is normally distributed within groups, the probability that a randomly sampled member of group $g$ correctly answers item $q$ is

$$\pi_{gq} = \Phi \left( \frac{\bar{\theta}_g - \kappa_q}{\sqrt{\sigma^2_q + \sigma^2_{\theta}}} \right),$$

(2)

where $\sigma_{\theta}$ is the standard deviation of $\theta_i$ within groups. We connect Equation (2) to the data through the sampling model

$$s_{gq} \sim \text{Binomial}(n_{gq}, \pi_{gq}),$$

(3)

where $n_{gq}$ is group $g$’s total number of non-missing responses to question $q$ and $s_{gq}$ is the number of those responses that are conservative. The estimates of $\bar{\theta}_g$ may be of interest in themselves, or they can be poststratified into estimates of, for example, average conservatism in each country (cf. Park, Gelman, and Bafumi 2004).

If the public were ideologically constant over time and all countries featured in the data, Equations (2) and (3) would be sufficient to produce a useful picture of the conservatism of every relevant group in every country. However, some countries are missing from our data some of the time, but we still wish to estimate their conservatism. And we explicitly want to allow for changes in ideology over time, including estimating for years with no data or very little data. To deal with these sparseness issues, we smooth the group-level estimates both across time and countries using a hierarchical model for group means. The magnitude of change between years is constrained by a prior that predicts $\bar{\theta}_{gt}$ based on its value in the

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6. Following Ghitza and Gelman (2013) and Caughey and Warshaw (2015, 202–3), we adjust the raw values of $s_{gq}$ and $n_{gq}$ to account for survey weights and for respondents who answer multiple questions. The latter is particularly important in this application because of the way that we deal with ordinal questions, which is to break each such question into a set of dichotomous questions, each of which indicates whether the response is above a given response level. For example, a question with three ordinal response choices, (1) “disagree”, (2) “neutral”, and (3) “agree,” would be converted into two dichotomous variables respectively indicating whether the response is above “disagree” and above “neutral.”
preceding year, year-specific changes common to all groups, and changes in other groups with characteristics (e.g., country or gender) similar to those of group \( g \). The specific model we use, which differs somewhat from that in Caughey and Warshaw (2015), is

\[
\tilde{\theta}_{gt} \sim N(\bar{\theta}_{g,t-1} + \xi_t + x_g' \gamma_t, \sigma_{\tilde{\theta}t}^2),
\]

where \( \bar{\theta}_{g,t-1} \) is \( g \)'s mean in the previous year, \( \xi_t \) is a year-specific intercept common to all groups, and \( x_g \) is a vector of attributes of \( g \) (e.g., its country, gender, etc.). The standard deviation \( \sigma_{\tilde{\theta}t} \) is estimated from the data and allowed to evolve across years. The posterior estimates of \( \tilde{\theta}_{gt} \) are a compromise between this prior and the likelihood implied by Equations 2 and 3. When a lot of survey data are available for a given year, the likelihood will be given more weight by the model. If no survey data are available at all, this prior acts as a predictive model that imputes \( \tilde{\theta}_{gt} \).

Finally, we also consider the possibility that the same question might have a different ideological meaning over time. Public support for the statement “Private enterprise is the best way to solve the country’s problems,” for example, changed little between 1993 and 2000, but it fell markedly in 2010 even as conservatism on other economic issues remained stable. The probable explanation for this discrepancy is that the severity of the “problems” created by the 2008–09 recession was such that, at that time, only quite conservative Europeans disapproved of government action to address them. In other words, due to the special circumstances of that year, the threshold for giving a conservative response to this question was higher than in previous years.

We can accommodate such changes in the mapping between question responses and latent ideology by allowing the threshold parameters \( \kappa_q \) to evolve between years as well.\(^7\) The downside of this more flexible model is that it underestimates ideological differences

\(^7\) Technically, we model the temporal evolution of \( \alpha_{qt} \) with a “random walk” prior centered on \( \alpha_{q,t-1} \) (cf. Martin and Quinn 2002).
between years because it attributes a portion of the true difference to changes in the question thresholds. It also means that the model should be primarily used to assess the relative ranking of countries over time, rather than to assess absolute ideological change, since the meaning of the questions underlying our scales are allowed to be different over time. As the question on private enterprise suggests, in this application the assumption that the ideological meaning of questions is constant is unrealistic. Empirically, the evolving-threshold model also seems to generate more plausible conservatism estimates with less temporal variability, especially in years with fewer questions. We therefore use the evolving-threshold estimates in the results that follow.

5 Results

Using the data and model described in Sections 3 and 4 we construct yearly estimates of mean conservatism among men and women in each Western European country in our three domains: economic issues, postmaterial and social issues, and issues related to immigration and nationalism. Estimating at the level of gender within countries is useful because gender is asked about in the same way in every single survey, and there are substantive reasons why men and women’s opinions are likely to differ, improving the performance of the hierarchical model. For instance, women in Europe have generally been shown to be more economically leftwing than men (Iversen and Rosenbluth 2006), which will be reflected in the estimates.

We measure the economic and social conservatism scales for years between 1990 and 2012. The immigration scale starts in 1999 due to the limitations of the survey data. We estimate the model using the Bayesian simulation program Stan as called from R (Stan Development Team 2015; R Core Team 2015), and we base our inferences on 2,000 samples from the posterior distribution.

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8. There is almost no overlap in immigration questions asked before and after 1999.
9. We estimated the model in parallel across 10 chains, discarding the first 3,000 iterations in each chain.
5.1 Patterns by Country

Figure 3-5 show the key country-level results from our model. They show estimated ideology across European countries at three different times: 1990-92, 2000-02, and 2010-12. Country-level scores are simply the average of the score for men and women. We take averages across short periods of time so as to avoid noise from individual unusual years, and because questions are likely to have similar ideological meanings over these short three-year periods. Within individual plots, we can see which countries are most conservative on a given scale, and which are most leftwing. And by comparing across time for a given scale, we can see how the distribution of ideology across countries has changed.

Figure 3: Average Ideology on economic issues across countries in three different time periods

<table>
<thead>
<tr>
<th>(a) Economic Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990–2</td>
</tr>
<tr>
<td>2000–2</td>
</tr>
<tr>
<td>2010–12</td>
</tr>
</tbody>
</table>

Note: Darker shade indicates more conservative. The estimates have been standardized and centered in each year to accentuate the grayscale contrasts

Starting with the economic scale, we can see a fairly consistent pattern over time. The starkest pattern is a clear north-south divide. The five southern European countries, plus...
France, clearly group together in each period as the most economically leftwing. Meanwhile, there is also a clear, mostly northern, group of the most conservative countries. Despite some movement between periods, the UK, the Netherlands, Switzerland, and the four Scandinavian countries are consistently the most unfavorable to larger government and redistributive measures. Denmark’s relatively conservative trajectory stands out, having been near the middle of the pack in 1990-92. Belgium and Germany, meanwhile, trended in opposite directions, with Germany moving from amongst the most conservative to relatively leftwing, and Belgium moving the opposite way. These are exceptions, though. The overall picture is one of consistency across time.

Figure 4: Average Ideology on postmaterial and social issues across countries in three different time periods

Note: Darker shade indicates more conservative. The estimates have been standardized and centered in each year to accentuate the grayscale contrasts

The findings for postmaterial and social issues are different to economic issues, both in terms of change over time and the ranking of countries. Across countries, many countries that are leftwing on economic issues are rightwing on social issues, at least by the end of
the period. Over time, we also see a gradual polarization across countries. In the earliest period, ideology on social issues was quite homogenous across Europe, with Scandinavia and the Netherlands only slightly more leftwing than the rest. By the end, however, there is a clear divide between a small group of relatively conservative, mostly southern, countries including Portugal, Italy, Greece, Cyprus, and (to some extent) Great Britain and Northern Ireland, and a much larger group of more moderate countries, amongst which Scandinavia, the Netherlands, Spain and Switzerland stand out as especially socially liberal.

Figure 5: Average Ideology on immigration issues across countries in three different time periods

![Map](https://via.placeholder.com/150)

(c) Immigration and Nationalism

<table>
<thead>
<tr>
<th>2000-2</th>
<th>2010-12</th>
</tr>
</thead>
</table>

**Note:** Darker shade indicates more conservative. The estimates have been standardized and centered in each year to accentuate the grayscale contrasts

For immigration, we see relatively similar cross-country rankings to social issues, with a couple of notable exceptions, as well as some degree of polarization over time. In contrast to social issues, though, the group of very liberal countries (Norway, Denmark, Sweden, Germany and Switzerland) is relatively small, and that of relatively conservative countries is big. To put it another way, both socially illiberal countries and pro-immigration countries
were unusual by the end of the period. Cyprus, Portugal and Greece stand out as conservative on both dimensions, and Sweden stands out as leftwing on both.

5.2 Regional Patterns

The country-level patterns are interesting but relatively complex to summarize. The broader patterns are even clearer when we aggregate countries into regional averages. This is also in line with much of the previous literature on aspects of European public opinion, which often look at regional patterns, since countries within regions have a lot of historical, cultural, institutional and economic similarities.

Figure 6 shows these patterns for four areas: Central Europe (France, Switzerland, Germany, Austria, Belgium and the Netherlands), Scandinavia (Denmark, Norway, Sweden and Finland), Southern Europe (Portugal, Spain, Italy, Greece and Cyprus) and finally the UK and Ireland. It shows that the Central European and British/Irish regions have typically occupied the center ground across all three dimensions, although the latter has become relatively more conservative on immigration, and the former more liberal on social issues over time. More starkly, we can see that Scandinavia and Southern Europe represent opposite ends of the spectrum. Scandinavia is the most conservative region economically but the most liberal on immigration and social issues, with Southern Europe the opposite.

Both of these regions have polarized from each other in their estimated stances on immigration and social issues, but it is important to be clear on how to interpret this. The changes in estimated ideology on social issues occurred in a context where most European countries were becoming more socially liberal in absolute terms over time, particularly on issues such as gay rights. Because our results over time primarily show changes in the relative rather than absolute positions, the increase in estimated conservatism for Southern Europe on social issues indicates mainly that these countries became relatively more conservative. In absolute terms, Southern European countries have either stayed still or liberalized much
Figure 6: Average Ideology by European Region

<table>
<thead>
<tr>
<th>Central Europe</th>
<th>Scandinavia</th>
</tr>
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<tbody>
<tr>
<td><img src="image" alt="Graph" /></td>
<td><img src="image" alt="Graph" /></td>
</tr>
</tbody>
</table>

Note: Estimates have been re-centered around zero for comparability

more slowly than in other places. For example, one question asked between 2002 and 2012 in our data asks respondents whether “gays and lesbians should be free to live as they wish”, with answers on a five-point scale where lower numbers indicate agreement. Over that period, Portugal showed no change in the mean response to this question, staying at a mean of 2.2, whereas Norway’s mean fell from 2.2 to 1.8. Thus the data indicate that the countries polarized in relative terms, even though Portugal did not become any more conservative in absolute terms. It was merely left behind as others liberalized more quickly.
5.3 Dimensionality

Figure 7 shows the relationship between estimated levels of conservatism on the three different dimensions we estimate, at the same three time periods as before. They simply plot one against the other, with smoothed loess curves and correlation coefficients. And by plotting the estimates on the same scales, we can see how polarization across countries occurs over time, as outliers grow more distinctive.

The seven bivariate relationships show quite strong and stable patterns over our period. Across countries, ideologies on economic and social issues are strongly negatively correlated. The correlation is also negative, but a little weaker, for economic issues and immigration. We can see that the weaker correlation is driven in part by Denmark, Sweden and the Netherlands, who are more pro-immigration than would otherwise be predicted by their relative economic conservatism. Finally, the correlation between positions on immigration and social issues is positive and very strong.

Our findings tentatively suggest that the distribution of ideology across Europe is multidimensional. Indeed, it does not appear to be very meaningful to say that certain European countries are more conservative than others, without specifying the dimension of opinion that we are talking about. In future versions of this paper, we plan to further explore the dimensionality of public opinion in Europe, and whether these three dimensions provide the best summary of opinion.

10 Alternatively, it is possible that ideology in Europe is one-dimensional, but not in ways that can be easily summarized by conventional ideological descriptions. Indeed, Figure 7 suggests that the countries with the most liberal economic views generally have the most conservative social views. Cutting against unidimensionality is that most country’s positions on the three dimensions are moving in different directions over time (Figure 6).
Figure 7: Relationships between estimated ideology on the three scales
6 Validation and Comparison

Here we compare our findings to two sources. First, we look at how our findings line up with past literature comparing public opinion across European countries on our three dimensions. Second, we compare our measures explicitly to the two past measures of ideology discussed in Section 2. We aim both to assess the plausibility of our findings, and to see how much they differ from existing measures of ideology that have been widely used in past applied work.

6.1 Comparison to Previous Public Opinion Literature

Due to the challenges of sparse data discussed above, there is a relatively small extant literature that examines ideological differences across Europe based on survey questions. The studies that do exist look only at small numbers of questions over short time horizons, and do not compare across the three dimensions we look at. These papers cannot be used as independent comparisons to our findings, because they are generally based on subsets of the same surveys that make up our dataset. Nonetheless, it is useful to verify that our results are not out of line with past findings. If they were wildly different to studies based on some of the same data, it would suggest that they may not be adequately representing the underlying data. In addition, comparing our results to past theories helps assess whether the estimated cross-country patterns make sense. Overall, we find that our results are strongly consistent with past domain-specific theories and empirical patterns.

There is a large existing literature on cross-country attitudes to economic issues and redistribution. Many studies test the so-called “regime hypothesis”, which suggests that countries’ average support for redistribution and welfare measures should be positively related to the generosity of their welfare state. This would lead us to expect that Scandinavian countries are the most supportive of redistributive measures, and the southern European countries the
least supportive, since the latter generally have weaker welfare states.

But in line with our findings that the Scandinavian countries are amongst the most conservative economically, most studies have found the opposite pattern. For instance, both Papadakis and Bean (1993) and Kenworthy and McCall (2008) show that Italy is generally more supportive of redistribution than its northern European counterparts, and Jaeger (2006) reports negative correlations between European countries’ benefit generosity and aggregate support for redistribution. Bonoli (2000), meanwhile, points out France and the southern European countries stand out as far more leftwing than their northern counterparts on measures of support for government intervention in the economy. In addition, both Svallfors (2003) and Jaeger (2009) find that central European countries such as Germany and Austria are generally more supportive of redistribution than the Scandinavian countries, despite having less generous welfare states. Again, both of these findings are clearly in line with our results.

Jaeger (2006) explains some of these patterns with the “growth to limits” theory: as welfare states expand, they generate a backlash. It is possible, as he puts it, that “citizens in the high-spending Scandinavian countries, compared especially to their fellow citizens in the Southern European countries, feel that redistribution has gone too far, and that this situation is reflected in their level of support for redistribution” (pp. 165-66). And Bonoli (2000) suggests that France and the southern European countries have much greater legacies of direct state intervention in markets, a tradition which is reflected in their political cultures, and hence in public opinion too. In light of past theory, then, our results are also plausible.

Turning now to social and postmaterial issues, several sets of studies have looked at cross-national opinions on individual issue areas that comprise our scale, such as gender equality, environmental issues and homosexuality. Cross-national distributions of opinion turn out to be similar across all three areas, and the main theme that links all of them theoretically is the postmaterialist hypothesis of Inglehart (1990). He argues that increased support for
these issues arises from new sets of values that become more socially liberal as countries
develop economically: as people become more prosperous and their basic material needs
are cared for, issues of quality of life and personal liberty become more important. Thus
cross-nationally, support for these issues should be strongly positively related to GDP.

On gender equality, authors have found a small set of countries with highly egalitarian
views on gender roles: the Scandinavian countries, and perhaps the Netherlands. Southern
European countries are the most traditional, with other countries in the middle, but gener-
ally closer to the conservative rather than socially liberal end of the spectrum (Haller and
Hoellinger 1994; Sundstrom 1999; Treas and Widmer 2000; Sjöberg 2004). These line up
quite closely with our findings. They also line up with postmaterialist theory: the Scandina-
vian countries are the richest in per-capita terms, and the southern countries are the poorest.
In addition, these papers argue that the patterns can be explained by feedback effects from
welfare states that encourage female employment in Scandinavia but fail to support it (or
even discourage it) elsewhere, as well as a strong social and political influence of Catholicism
that supports traditional family values in Southern Europe and some of Central Europe.

Likewise, studies of support for gay rights find a clear income gradient across countries
consistent with our findings and with the postmaterialist hypothesis, as well as the influence
of Catholicism. Studies show that most European countries saw big rises in support for
gay rights over the period we are examining, with the Scandinavian countries (excluding
Finland) and the Netherlands once again leading the charge. Countries such as the UK,
Germany, Ireland and France saw more modest rises in support and occupy the middle
ground, while the southern European countries (excluding Spain) did not see substantial
rises in support and remained quite opposed to homosexuality. Greece and Portugal stand
out as particularly conservative (Scott 1998; Andersen and Fetner 2008; Akker, Ploeg, and
Scheepers 2013). This helps explain the polarization that we see over time in Figure 1.
Finally, environmental issues saw the same distribution of cross-country support, just as in
our estimates (Inglehart 1995; Franzen and Meyer 2009; Franzen and Vogl 2013)

Studies of cross-national opinion on immigration in Europe are rarer. The two major studies covering the early part of our data in the early 2000s, however, found a similar cross-country distribution of ideology. As in our results, there is a north-south divide, with Portugal, Greece and Austria standing out as relatively conservative, and Sweden, Denmark and Switzerland especially leftwing (Semyonov, Raijman, and Gorodzeisky 2008; Meuleman, Davidov, and Billiet 2009).

This pattern is generally explained with the “perceived threat” theory: people are more opposed to immigration when they are more directly threatened by it, or perceive this to be the case (Semyonov, Raijman, and Gorodzeisky n.d., 2008). Thus countries with lower levels of GDP should be more opposed to immigration, because in poorer societies, natives are more likely to be in direct competition with immigrants for jobs. This is largely in line with our data, since the wealthiest countries in per capita terms are the Scandinavian countries, Switzerland and Germany, while the poorest countries are in southern Europe. Wealth disparities also grew over time following the financial crisis, which may have fueled some of the polarization we see over time in our data. Similarly, the perceived threat hypothesis predicts that countries with higher actual or perceived immigration should be more opposed to it. This is also largely in line with our findings, particularly because southern European countries have recently seen very rapid increases in attempted immigration from northern Africa and the Middle East, especially in Greece.
6.2 Comparison to Past Measures of Ideology

Next, we move to comparing our results against the two existing measures of European-wide ideology, namely left-right self-placement scales\textsuperscript{11} and measures of median voter positions\textsuperscript{12}. These both use measures that are separate from any of the survey questions in our dataset, thus serving as full comparisons to our findings. Notably, they are both uni-dimensional, placing countries on a single left-right scale.

Figures 8 and 9 show the results of our comparison, using scatter plots to compare the two sets of estimates for each period and each measure, together with smoothed loess curves. To maximize the number of datapoints, the median voter measures use the measure from the nearest election within one year of either end of our ranges; where two elections occur within the period, an average is taken.

Overall, we find only modest correlations between our ideological estimates and the two existing measures of European-wide ideology. For the left-right scores, (Figure 8), several contrasts stand out immediately. First, there is simply less variation in left-right scores than on our measures of ideology: in the plot, it is harder to distinguish countries vertically than horizontally. This echoes the discussion of McDonald and Budge (2005), who suggest that cross-country variation in left-right scores is implausibly low. Beyond that, there are many contrasts to our estimates. For instance, countries with similar ideologies on all three dimen-

\textsuperscript{11} The measure of left-right positions comes from all Eurobarometer surveys containing the question over the period, often several per year. As discussed in Section 2, it simply asks respondents to place themselves on a ten-point scale from 1 to 10, where higher values indicate that the respondent consider themselves to be more rightwing. Our country-level measure for each year is the average of all individual responses in that country-year (weighted by survey weights), in line with past studies. This is available for the full range of our data.

\textsuperscript{12} The measure of median voter positions comes from a measure originally constructed by Kim and Fording (1998) and Kim and Fording (2003). Their approach begins with quantitative estimates of the ideological position of all major European political parties from the Comparative Manifesto Project (Budge et al. 2001). Then, under the assumption of spatial voting - voters vote for the party closest to themselves ideologically - the position of the median voter is simply equal to the median party position, weighted by vote share. In this study, we compare our findings to a slightly more recent version of the original Kim-Fording dataset produced by De Neve (2011), although his estimates still end in 2003. In addition, estimates for each country appear only in election years, when manifestoes are available, rather than annually.
Figure 8: Comparison of Ideology Estimates to Left-Right Self-Placement Scores

(a) Economic Issues 1990–92

(b) Economic Issues 2000–02

(c) Economic Issues 2010–12

(d) Postmaterial and Social Issues 1990–92

(e) Postmaterial and Social Issues 2000–02

(f) Postmaterial and Social Issues 2010–12

(g) Immigration and Nationalism 2000–02

(h) Immigration and Nationalism 2010–12

Note: Left-Right self-placement is the average of all responses for a given country in a given year of Eurobarometer Surveys.

Conversely, some countries with very different ideologies according to our scores rate themselves similarly on the left-right scale, such as Ireland and Denmark.
The unidimensionality of previous measures also appears to be problematic. People in the Scandinavian countries consistently rate themselves towards the right in the left-right data. It may be that respondents there have in mind economic factors when answering the question, since these countries were clearly the most leftwing on our measures for social issues and
immigration. On the other hand, Greeks also consistently rate themselves as relatively right-wing, which is in line with their stance on social issues and immigration in our findings, but not on economics. These findings point strongly to differential item functioning in answering the left-right question. People across countries seem to understand and interpret the left-right scale very differently, and these distinctive national interpretations persist over time, rather than for instance changing as one or other dimension becomes more associated with the symbols “left” and “right”. Overall our findings suggest that, at least cross-nationally, left-right identities may be more idiosyncratic than they are directly comparable.

For the median voter scores, there is some very weak evidence that our measures of economic ideology correlate positively in the second period. Otherwise there is no evidence of a positive association with any of our scales; if anything the median voter scores are negatively related to social ideology in the second period, with some of the most socially liberal countries such as Denmark and Switzerland labelled as most conservative by the median voter measure.

In contrast to the left-right scores, the median voter scores tend to exhibit notably high variability over time. Some countries show changes that are at least in the same direction as our economic scale, such as Denmark and Great Britain, which became relatively more conservative between the two periods shown according to both our economic scale and the median voter measures, although the magnitude of Britain’s change is somewhat more dramatic than in our data. Other changes fit poorly with our findings, such as Spain and Switzerland, which also move much more drastically on the median voter model than in our models.

A likely explanation is that these large changes are caused by changes in vote shares that may not be entirely related to voters moving closer to certain parties ideologically. For instance, a country could appear to have become more conservative simply because a conservative party increased its vote share due to greater perceived competence in running
the economy. A further consequence of this is that countries that are quite ideologically similar based on opinion data can be placed quite far apart on the median voter measure. For instance, in 2001, Denmark elected its first Conservative majority government in a decade, whereas Sweden had a social democratic government throughout the period. As a consequence, the median voter score in the latter period implies a big and sudden divergence between the two, which is implausibly large based on their estimated similarity in our models, even though Denmark did trend rightward over the period on economics.

7 Conclusion

In this paper, we develop the first measure of policy ideology that is comparable both across European countries and across time. We measure the mass public’s ideology over the past two decades on three broad categories that capture the key dimensions of political conflict and ideology in contemporary Europe: the classic left-right divide over the size of government and its role in mitigating inequality; the cultural dimension that incorporates postmaterialist concerns over the environment and gender equality, social concerns such as abortion and gay marriage; and an immigration-oriented dimension that captures issues of nationalism, identity and immigration.

We find that countries within Europe have become relatively polarized over time, and that patterns of ideology are starkly different across dimensions. On economic issues, Scandinavian countries stand out as the most conservative and Southern Europe as most leftwing, with this gap growing over time. At the beginning of our period, European countries were relatively homogenous in their ideologies on social issues, but over time, Scandinavian and most other Northern and Central European countries have become much more socially liberal than outlying countries. Finally, on immigration, a similar polarization has occurred, but only a few countries have trended in the socially liberal direction.
Our data suggest caution in applying uni-dimensional concepts to compare ideology across European countries and regions. The distribution of ideology across countries is very different for economic issues, compared to social issues and immigration, and this divergence has grown over time. We also show that our measures across all three dimensions correlate poorly with the rankings implied by current, non-survey-based measures of ideology, but are strongly consistent with past findings and theories in the public opinion literature. This suggests that applying measures such as median voter scores in applied work may be problematic, insofar as they are used to capture ideological differences across countries.

Our new measures enable scholars to address a wide variety of substantive questions. How do the mass publics of European countries differ ideologically from one another? How have they changed ideologically over time? How does this ideological variation affect election outcomes and policy outputs? Do some political systems and institutions foster greater responsiveness to mass opinion? How do citizens react ideologically to political crises, economic shocks, and other dramatic events?

In future work, we plan to further evaluate the dimensionality of public opinion in Europe. We also plan to extend our measures of ideology back in time. Moreover, we hope to add more European countries onto our common scale. We believe that these new estimates will have a large number of applications for European scholars and country specialists, as well as broader comparative politics studies of public opinion, representation, and electoral dynamics.
References


