

Online Appendix:
The preference for Europe: Public opinion about European integration since 1952
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Data and Measures

Table A.1. Survey Items and Years of Coverage

Measure	Begin Year	End Year	Question Wording
EU Benefit	1983	2011	Taking everything into consideration, would you say that (your country) has on balance benefited or not from being a member of the European Union (Community, Common Market)?
EU Democracy	1993	2017	On the whole are you very satisfied, fairly satisfied, not very satisfied, or not at all satisfied with the way democracy works in the EU?
EU Image	2000	2017	In general, does the European Union conjure up for you a very positive, fairly positive, neutral, fairly negative or very negative image?
EU Membership	1957	2011	Generally speaking, do you think (your country's) membership of the European Community (Common Market) is a good thing, a bad thing, neither good nor bad?
EU Optimism	2007	2017	Would you say that you are very optimistic, fairly optimistic, fairly pessimistic or very pessimistic about the future of the EU?
Europe Attachment	2002	2017	People may feel different degrees of attachment to their town or village, to their region, to their country or to Europe. Please tell me how attached you feel to Europe.
Integration Speed	1973	2013	"In your opinion, how is the European Union, the European unification advancing nowadays? Please look at these people (card as shown on graph below) - No 1 is standing still, no 7 is running as fast as possible. Chose the one which best corresponds to what you would like?" (1= standing still, 7 = running as fast as possible)
Regret if EU scrapped	1970	2004	If you were told tomorrow that the European Community (Common Market) - European Union - had been scrapped, would you be very sorry about it, indifferent or very relieved?
Trust in EU institutions			And, for each of them, please tell me if you tend to trust it or tend not to trust it?
Commission	1993	2017	...The European Commission
Council	1993	2004	...The Council of the European Union
Court of Justice	1993	2013	...The European Court of Justice
European Parliament	1993	2017	...The European Parliament
European Central Bank	1999	2011	...The European Central Bank
Unification	1952	1995	In general are you for or against efforts made to unify Western Europe?

Analysis

The dyad ratios algorithm is implemented through the Mac version of the “Wcalc” program (called Mcalc), which is made available on James Stimson’s website (www.unc.edu/~jstimson). Wcalc users are responsible for providing the program with survey responses, the dates of those responses, and the number of responses collected. Wcalc is then able to sort the responses into the appropriate specified periods (daily, monthly, quarterly, annual, or multiple years as designated by the user), and performs a weighted averaging procedure when more than one survey response is available per period (Stimson, 2004). We presume annual periods, given the relative scarcity of data points during the early decades compared to the later ones.

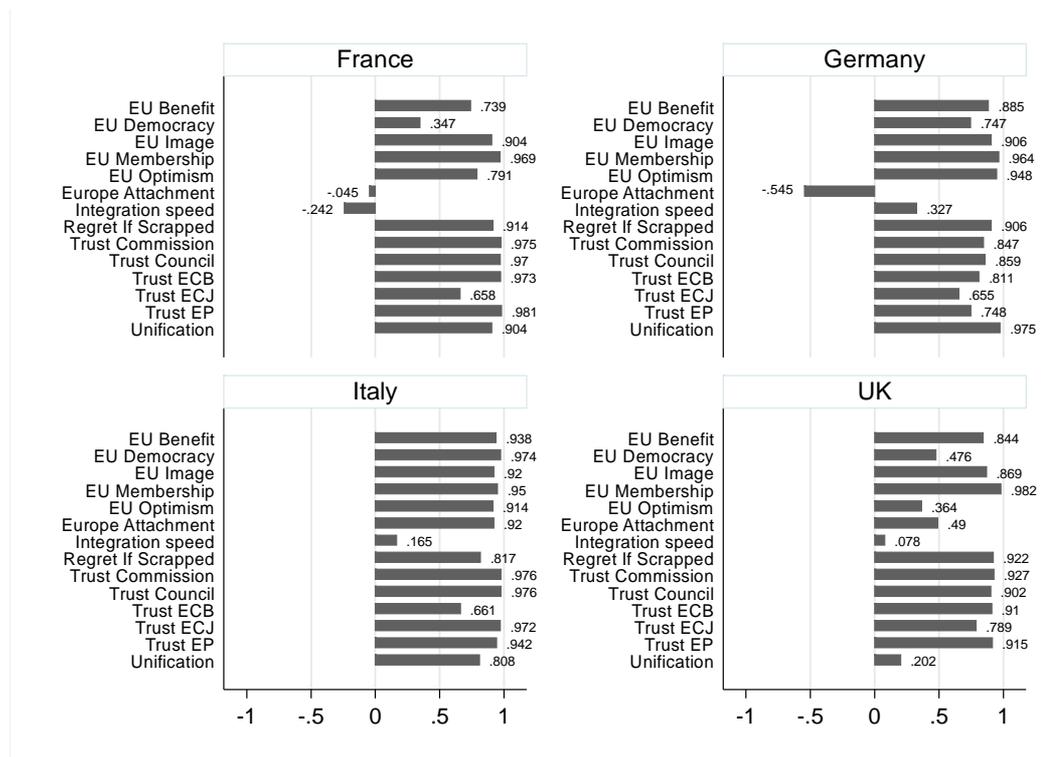
The algorithm takes advantage of the fact that, while the absolute values of survey marginals are not directly comparable across indicators with different response categories, the ratios of change between any two points in time within an indicator are. We therefore standardized positive and negative responses by taking the ratio of positive over all positive and negative responses to ascertain the direction of support. As a robustness check, we conducted additional analyses using only the raw marginal. They revealed that alternative approaches do not change the substantive conclusions.

Moreover, the algorithm helps to overcome the problem of missing data during periods when some of the questions were not asked by making use of the various pieces of information we do have, from each survey question that has been measured more than once, concerning the relative values that those particular questions take when they are measured. As Stimson points out “it is useful to switch focus from what we don’t know, the missing values, to what we do know” (Stimson, 1999: 133).

Finally, the algorithm is equipped with an optional smoothing function, which we choose to employ in order to minimize the “noise” inherent in this kind of survey data. The algorithm uses exponential smoothing to account for sampling error because “one wishes to observe common movements in the evolution of issue series and not tailor a fit to particular

zigs and zags that may be random variation around a deterministic process” (Stimson, 1999: 135). For a detailed description of the algorithm see, in particular, the appendix to Stimson (1999), esp. pp. 133–137.

Figure A.1. Preference For Europe Factor Loadings (1973-2017)



Time Series Analysis

We examined the dynamic properties of the support indicator more formally to establish whether the series reflect a long-run equilibrium around a constant mean level of support as well as a fairly constant dispersion around that mean level, or what is also known as stationarity (Box and Jenkins, 1976). To answer this question, we applied standard tests for stationarity in the form of augmented Dickey-Fuller (ADF) as well as Kwiatkowski, Phillips, Schmidt, and Shin (KPSS, 1992) unit root and stationarity tests. In the ADF test, the null hypothesis is that the series contains a unit root; the alternative hypothesis states that the

series were generated by stationary process. The ADF test is a well-known test for the presence of weak stationarity in time series data. Its null hypothesis is that the data set is not stationary. The KPSS (Kwiatkowski, Phillips, Schmidt, Shin) test is a more recently developed test of stationarity (Kwiatkowski, et. al, 1992). It is known to be fairly conservative, as it has rejected stationarity in datasets that other tests have determined to be stationary.

The results are shown in Table A.1. Under the ADF test, the series is considered stationary if the null hypothesis is rejected. In contrast, the KPSS test performs a test for stationarity of a time series. That is, it differs from the ADF unit root test by having a null hypothesis of stationarity; thus, rejecting the null hypothesis implies that the series is nonstationary. Results show, first, that the test values for the ADF tests reject a unit root for the UK, while they do not for France, Germany, and Italy. This indicates that the UK series is stationary, whereas those in the other three countries are not. The results from the KPSS analyses corroborate this conclusion for France and Italy. Thus, for these two countries, stationarity is clearly rejected; turned around, it confirms that the Italian and French series do not have a constant mean and variance over the period we investigate, a fact that is reflected in the downward trend since the 1980s that shows little sign of abating.

The results of the KPSS tests for the German and British support series are more equivocal; they reject stationarity for both countries at lower lags, but fail to reject it at lags 2 and 3 in the German case and lag 3 in the UK. That is, in these countries, support for Europe does not have an unchanging level to which support inevitably returns after moving up or down over time, even though the UK comes closest to this characterization among the group of countries examined here. As mentioned above, there does seem to be a slight downward trend in the level of support in these countries when support is considered over the entire 65-year time span since 1952, though this decline is gradual and extends over several decades, rather than years.

Table A.2. Results of Stationarity Tests for Time Series of Support for Europe

Test		France	Germany	Italy	UK	Critical Value 5%
ADF	Lag = 0	-0.635	-1.285	-1.872	-2.286	-2.918
	Lag = 1	-0.744	-1.514	-1.358	-2.939	
	Lag = 2	-0.345	-1.160	-0.629	-3.527	
	Lag = 3	-0.876	-1.027	-1.626	-2.783	
KPSS	Lag = 0	1.01	.256	1.170	.403	0.146
	Lag = 1	.546	.149	.637	.221	
	Lag = 2	.390	.114	.453	.160	
	Lag = 3	.310	.096	.358	.131	

Notes: *: $p < .1$; **: $p < .05$; ***: $p < .01$.

References

Box GEP and Jenkins GM (1976) *Time Series Analysis: Forecasting and Control*. Oakland: Holden Day.

Kwiatkowski D, Phillips PCB, Schmidt P, and Shin Y (1992) "Testing the Null Hypothesis of Stationarity Against the Alternative of a Unit Root." *Journal of Econometrics* 54 (1-3): 159-178.

Stimson, JA (1999) *Public Opinion in America: Moods, Cycles, and Swings*, 2nd Edition. Boulder, CO: Westview Press.

Stimson JA (2004) *Tides of Consent: How Public Opinion Shapes American Politics*. New York: Cambridge University Press.