CESifo WORKING PAPERS

6469
2017

May 2017

Is Europe an Optimal Political Area?

Alberto Alesina, Guido Tabellini, Francesco Trebbi

CESifo

Impressum:

CESifo Working Papers
ISSN 2364-1428 (electronic version)
Publisher and distributor: Munich Society for the Promotion of Economic Research - CESifo GmbH
The international platform of Ludwigs-Maximilians University's Center for Economic Studies and the ifo Institute
Poschingerstr. 5, 81679 Munich, Germany
Telephone +49 (0)89 2180-2740, Telefax +49 (0)89 2180-17845, email office@cesifo.de
Editors: Clemens Fuest, Oliver Falck, Jasmin Gröschl
www.cesifo-group.org/wp

An electronic version of the paper may be downloaded
· from the SSRN website: www.SSRN.com
· from the RePEc website: www.RePEc.org
· from the CESifo website: www.CESifo-group.org/wp

CESifo *Working Paper No. 6469*
Category 1: Public Finance

Is Europe an Optimal Political Area?

Abstract

Employing a wide range of individual-level surveys, we study the extent of cultural and institutional heterogeneity within the EU and how this changed between 1980 and 2008. We present several novel empirical regularities that paint a complex picture. While Europe has experienced both systematic economic convergence and an increased coordination across national and subnational business cycles since 1980, this was not accompanied by cultural nor institutional convergence. Such persistent heterogeneity does not necessarily spell doom for further political integration, however. Compared to observed heterogeneity within member states themselves, or in well functioning federations such as the US, cultural diversity across EU members is a similar order of magnitude. The main stumbling block on the road to further political integration may not be heterogeneity in fundamental cultural traits, but other cleavages, such as national identities.

Alberto Alesina
Harvard University
Department of Economics
USA - 02138 Cambridge MA
aalesina@harvard.edu

Guido Tabellini
Department of Economics
Bocconi University
Italy - 20136 Milano
guido.tabellini@unibocconi.it

Francesco Trebbi
Vancouver School of Economics
University of British Columbia
Canada - Vancouver, BC, V6T 1L4
Francesco.Trebbi@ubc.ca

April 2017
We are grateful to our editor Jim Stock, our discussants Markus Brunnermeier and Elias Papaioannou and many confernce participants for detailed comments and suggestions. We also thank Matilde Bombardini, Nicola Gennaioli, Francesco Giavazzi, Luigi Guiso, Francesco Passarelli, Eric Weese, and Luigi Zingales for useful conversations. We thank Bocconi University, CIFAR and ERC Grant 741643 for financial support and Igor Cerasa, Clémence Idoux, Matteo Ferroni, Armando Miano, and Giorgio Saponaro for excellent research assistance.

Introduction

The European Union (EU) is facing hard challenges. Throughout the EU, many citizens have become less trusting of EU institutions and less tolerant of supranational interference with domestic policies. As a result, the process of European integration is struggling and, for the first time, it has reversed direction with Brexit. Populist parties, who blame the EU for everything that is wrong in their own country, have gained electoral support. Animosity between countries and, particularly, a North versus South cleavage is evident.[1] Is this just a (temporary) by-product of the recent financial crisis, or are the recent tensions a manifestation of pre-existing and deeper cleavages? Was the project of a Federal Europe too ambitious, because Europeans are too heterogeneous in their economic interests, beliefs, and cultural values, or are the current difficulties mainly due to inadequate supranational institutions? The answers are not simple and we uncover forces pushing in opposite directions.

We follow Alesina and Spolaore (1997, 2007) and Barro (1991) in thinking of the optimal size of a political union as emerging from the trade-off between the benefits of integration in terms of economies of scale and scope, and the cost due to heterogeneity in preferences. There are economies of scale in Europe. To begin with, Europe has a large market with free trade. In addition, environmental protection, control of immigration, defense against terrorism, foreign policy, a common army, research and innovation may be all best addressed at the European rather than at the national level, and more so today than thirty years ago. Europeans are aware of these advantages. In the 2016 Eurobarometer survey, a very large fraction of respondents favored more EU level decision making in areas such as fighting terrorism (80% in favor), promoting peace and democracy (80% in favor), protecting the environment (77% in favor), dealing with migration from outside the EU (71% in favor), securing energy supply (69% in favor).

Is there sufficient commonality of views amongst Europeans to make it possible to reap the benefits of these economies of scale? Specifically, how different are Europeans, in terms of fundamental cultural traits? And during the last thirty years have they become more similar, in terms of economic, institutional, and cultural fundamentals? To address these questions, we study

[1] For an extensive discussion of the poltical dificultes facing the EU including the rise of populist parties see Beck and Underhill (2017).

the EU 15 countries plus Norway between 1980 and 2008. Thus, we do not investigate Central and Eastern Europe, nor do we study the consequences of the recent financial crisis.[2]

We begin by documenting a deep process of economic integration in goods, services, and financial markets. The first phase of this process, approximately between 1980 and the late 1990s, was also accompanied by rapid economic convergence, with poorer European countries growing faster than richer ones. Convergence continued although at a lower speed until the financial crisis. We also show increased co-movement across EU economies (a relevant condition for optimal currency unions, if not for political ones), both at the national and subnational (NUTS3) level. In addition, and contrary to the US, overall after-tax income inequality did not increase within this group of countries since 1980 .

One would expect economic integration and convergence to be accompanied by increased homogeneity in attitudes between citizens of different countries. Increasingly shared values were among the anticipated benefits posited by the founding fathers of the EU (see the 1950 Schuman Declaration). We find no evidence of this. On the contrary, between 1980 and 2009 Europeans became slightly more different in their attitudes towards trust, values such as appreciation of hard work or obedience, gender roles, sexual morality, religiosity, ideology, role of the state in the economy and related economic issues. We show that these traits evolved over time and are not immutable national characteristics. Both Northern and Southern European countries became more secular, but the former at a faster rate than the latter, so that cross country differences increased.

European integration also deliberately attempted to harmonize institutions and policies in several areas, establishing common benchmarks and targets for institutional improvements. Did this lead to institutional convergence? We find mixed evidence: in some institutional areas European countries became more similar, but in others the opposite happened. In particular, the quality of the public administrations and of the legal systems did not converge, with Southern Europe falling further behind Northern Europe.

Does this mean that the project of a political union in Europe is doomed? Not so fast. In the second part of the paper we show that preference het-

[2]Thus the countries considered are: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, the UK.

erogeneity and cultural diversity are about ten times as large *within* each EU country in our sample than *between* them. This finding applies not only to individual data, but also to regional averages. Within country differences in regional averages are sometimes larger than differences between the average traits of regions belonging to different countries (think of Northern Italy versus Southern Germany and Northern Italy versus Southern Italy). If the fully functioning democracies in Europe can handle a substantial amount of within-country cultural diversity, why could the EU not handle a similar level of heterogeneity between individuals of different countries?

A comparison with the US leads to similar conclusions. Europeans are not more different from each other than Americans, who, incidentally are also becoming more different from each other. If the US can handle these differences relatively well, what prevents Europe from also doing so? Probably in Europe relatively small cultural differences are vasty amplified by other cleavages, such as national identity and language. Cooperation and conflict resolution are much easier if individuals share a common history, centuries of nation building, and a common language, as in the US. Thus, the critical issue for the future of European integration is not so much that Europeans are still too different from each other in terms of culture, policy preferences, or national interests. The important question is the evolution of national versus European identities.

Our paper is related to several recent contributions. Spolaore (2013) adopts the same conceptual approach of our paper, emphasizing the benefit of scale and the cost of heterogeneity. He discusses Monnet's theory, according to which any additional move toward integration in Europe cannot be reversed. On this point, Guiso, Sapienza, and Zingales (2016) argue that the EU is stuck in the "middle of the river": gone far enough to be very costly to abandon, but subject to too many forces pulling in a centrifugal direction. Guiso, Morelli, and Herrera (2016) emphasize the German-Greek cultural divide during the sovereign debt crisis. Our more systematic evidence provides a different view, in terms of similarity of "cultural fundamentals". Brunnermeier, James, and Landau (2016) highlight how different economic ideas, between the French and the German especially, are a crucial impediment to further economic integration. These differences are clearly there, and in our analysis we confirm that cultural attitudes in France are quite different from Germany. However, we focus on deep cultural traits that we think are more important for the long-run viability of a political union, compared to possibly contingent ideas about the appropriate macroeconomic policy framework.

The paper is organized as follows. Section I discusses economic convergence in Europe. Section II and III consider cultural and institutional, convergence. Section IV compares cultural heterogeneity within and across EU countries. Section V compares the EU countries with US states. The last section concludes.

I Economic Convergence

One the purposes of the EU has been to foster greater economic integration among its members. This goal has been vastly achieved. How did this affect economic convergence between European countries and regions? A large literature has addressed this question, with mixed results that depend on the sample of countries, on the time period, on the method of analysis, and the type of convergence. Existing studies generally find evidence of economic convergence in GDP per capita in the long run, due to the catch up in growth of the poorer countries (Greece, Ireland, Portugal and Spain in the earlier period, and Eastern Europe more recently).[3]

An equally large literature asked whether trade and financial integration makes business cycles more or less synchronized. A priori the effect can go either way, as trade integration may lead to specialization and hence divergence, or complementarity in production and convergence. Likewise, financial integration could amplify the domestic effects of idiosyncratic shocks or increase the international transmission of such shocks, with ambiguous effects on synchronization. The evidence is mixed, although the prevailing view is that business fluctuations have become more synchronized within Europe and the Eurozone in particular.[4]

In this section we revisit and complement the analysis of economic convergence and output co-movement for the EU 15 countries plus Norway in the period 1980-2009. This is the same sample of countries and the same

[3]Several studies document how, up until the onset of the financial crisis in 2008, the various phases of EU deepening have led to greater trade integration (Gil-Pareja, Llorca-Vivero and Martìnez-Serrano, 2008), more financial integration (Jappelli and Pagano, 2010) and more labor mobility (Portes, 2015, European Commission 2015) between EU member states.

Economic convergence has been studied for instance by ECB (2008), Kutan and Yigit (2009), Boldrin and Canova (2001), Villaverde and Maza (2008).

[4]See for instance Frankel and Rose (1998), Kalemli-Ozcan et al. (2013), Gogas (2013), Backus, Kydland, Kehoe (1992).

period covered by the analysis of cultural convergence in Section II. The data sources for the variables used in this session are listed in Table A.1 in Appendix.

I.A Trends in Average Per Capita Income

We start with long run convergence in GDP per capita. The source is the Penn World Tables 9.[5] Figure 1.1 depicts the standard deviation of real GDP per capita among the 16 countries in our sample. Barro and Sala-i-Martín (1992) pioneered this type of analysis, which they call Sigma convergence. After an initial drop in the 1980s and 1990s, the dispersion in real GDP per capita remained roughly stable between the late 1990s and 2009.

Figure 1.1 here

This pattern is confirmed by the analysis of Beta convergence (again using Barro and Sala-i-Martín's terminology). In Figure 1.2 we illustrate a cross-country regression plot, where we estimate a linear regression of the growth of real GDP per capita between 1980 and 2009 against the initial level of real GDP per capita in 1980 (in logs) in the same sample of countries. The slope of the regression line is negative and statistically different from zero, indicating that throughout this period average growth was higher for the initially poorer countries. The evidence of Beta convergence is much weaker from the late 1990s onwards, consistently with Sigma convergence, but this is largely due to the strong performance of Norway (a high income country) that benefitted from the rise in oil prices in the more recent years. The sample includes countries that belong to the Economic and Monetary Union (EMU) and countries that do not, but the pattern is similar if we confine attention to the EMU.

Figure 1.2 here

I.B Income Inequality

We now turn to the dispersion of individual income within Europe. Income (which is highly correlated with education and occupational status) is a key

[5] Our result holds also using GDP data from Cambridge Econometrics. The main difference between the two sources is that Cambridge Econometrics does not adjust for deviations of market exchange rates from PPP.

determinant of cultural traits (Inglehart 1997). Atkinson (2015) and Piketty (2014), among others, document that inequality has increased in some (but not all) advanced countries. At the same time, there was convergence in average per capita income between countries in Europe. The net effect of these two forces is uncertain. How did overall income inequality evplve in Europe between the early 1980s and 2010?

To answer, we rely on micro data from the Luxembourg Income Study (LIS), which are obtained from independent income surveys and are ex post harmonized. The data are available for only a subset of the countries, namely Denmark, Finland, France, Germany, Italy, Luxembourg, Netherlands, Spain, and the UK. Income is measured as total disposable household income (net of taxes and transfers). It is converted into individual income using weighted household size by country, and then it is converted in 2010 international dollars for all years. We pool together all households in our sample, irrespective of nationality, and then we compute a yearly value for the Gini coefficient.[6] The evolution of the after-tax Gini coefficient is roughly flat between 1985 and 2010 (see Figure A.1 in the Online Appendix). The forces of economic convergence and the within-country dynamics of increased inequality appear to cancel out. Thus, in Europe as a whole (for the countries for which we have LIS data) inequality did not increase, contrary to what happened in the US (Piketty and Saez, 2003).

I.C Correlation in Yearly Growth Rates

Next, we consider the issue of economic convergence within the EU at the business cycle frequency. The unit of analysis is the NUTS3 region and the data is from Cambridge Econometrics. We split the sample in the two subperiods before and after the single currency: 1980-1998 and 1999-2009. For each subperiod, we estimate a matrix of pairwise linear correlation coefficients, ρ_{ijt}, of the yearly growth rate of GDP between all regions in our sample, where i and j denote regions and $t = 1, 2$ denotes subperiods. We then compute the change in these correlation coefficients over the two subperiods, $\delta_{ij} = \rho_{ij2} - \rho_{ij1}$. Figure 1.3 illustrates the kernel density of these changes, the distribution of δ_{ij}, for (i, j) pairs of regions belonging to the

[6] See Brandolini (2009) for the issues that arise in computing a supernational measure of income inequality.

same country (dotted line) and to different countries (solid line).[7] While the same-country distribution is centered approximately around zero, the distribution for regions belonging to different countries is clearly shifted to the right (the median and mean of the kernel density are positive). Thus, the introduction of the Euro is associated with an increase in the correlation of yearly output growth for (i, j) pairs belonging to different countries, while within-country correlations have not changed substantially on average. In other words, since the start of the Euro there is increased synchronization of regional output across European countries at the yearly frequency, but not within countries.

This result also holds when focusing only on (i, j) pairs of regions with sum of log populations (measured in 1980) above the median or above the 75th percentile and also for regional pairs with geographic distance of the regions' centroids above the median or above the 75th percentile. So increased output co-movement does not come solely for tiny or very close pairs of regions, but holds across all Europe and it is not only due to the catching up of small regions. We have also disaggregated output by sector, and the result of enhanced co-movement between regions belonging to different countries holds for all sectors, with the exception of agriculture.[8]

Finally, notice that while our estimates of ρ_{ijt} are likely carrying noise due to sampling variability, this particular issue should not affect the relative position of the distributions that we report - bar not intuitive changes in sampling variability over time.

Figure 1.3 here

Is this enhanced correlation in yearly growth rates just a consequence of sharing a common monetary policy and a common currency, or does it reflect more general tendencies, such as commercial and financial integration? To address this question, we consider the change in correlation coefficients, δ_{ij},

[7] The distribution has been fitted with the Epanechnikov kernel and with a bandwith of 0.046.

[8] We also explored co-movement in regional employment, with the same method. On average the correlation coefficients of the yearly growth of employment have gone down for regions belonging to the same country, while they have remained stable for regions belonging to different EU countries. In other words, in the more recent period there has been less comovement in employment within countries, but not across countries. Given the patterns described above for GDP growth, this is the mirror image of divergent productivity growth within (but not across) countries.

between different groups of regions. Figures 1.5 depicts the distribution of δ_{ij} within the EMU, outside of the EMU, and between regions inside and outside the EMU. The shift to the right is most pronounced for regions within the EMU, but the change in correlation between ins and outs of EMU also has a large density mass above zero, suggesting that the increased output synchronization is not just due to sharing a common monetary policy.

Figure 1.4 here

We then focus on EMU countries only. We repeated the same exercise as Figure 1.4, but for three groups of regions: (i, j) pairs within the core set of countries in the Eurozone, within the periphery only, and between core and periphery. The core is defined as Austria, Belgium, Finland, France, Germany, Luxembourg, and the Netherlands. The periphery consists of Greece, Ireland, Italy, Portugal, and Spain. Increased co-movement has taken place for all three groups of regions, but it is most pronounced within the core and between core and periphery, suggesting that the shocks that have hit the periphery have remained more idiosyncratic (recall that the second subperiod ends in 2009, and so the analysis does not include the European sovereign debt crisis). Figure A.2 in Appendix shows the results.

I.D Cluster Analysis

Finally, we consider cluster analysis, which imposes less structure on the data, to look at co-movements in regional output. Here too, the raw data are yearly growth rates in regional real GDP, for the same two subperiods 1980-1998 and 1999-2009. We employ two methods of analysis. The first is a dimensionality reduction method (Principal Component Analysis).[9] The second method is a partitioning cluster analysis (Spectral Clustering). Dimensionality reduction methods aim at reducing a multidimensional problem into a lower dimensional one. For us this is equivalent to saying: although output dynamics of Europe at the regional level in our sample can be described by 966 different output time series (one for each NUTS3 region), we can do equally well by concentrating on only one or two main dimensions. This would be a valid approximation, for instance, if in Europe there were one or two groups of regions following near identical growth trajectories within

[9] In the working paper version of the paper we also consider Multidimensional Scaling as an alternative dimensionality reduction approach.

each cluster. Spectral Clustering is a more subtle method and aims not only at reducing the dimensionality of the problem, but at truly classifying observations (regions) into groups of connected regions ("connected" meaning that i, j co-vary together in terms of output in the graph represented by the adjacency matrix $\Gamma = \{\rho_{ijt}\}$).[10]

Figure 1.5 illustrates the results for the 15 EU countries. The left panel refers to Principal Component Analysis (PCA) and produce the screeplot profile of eigenvalues for the subperiods 1980-98 and 1999-2009. The screeplot "elbow" has clearly a sharper angle in the second period indicating the possibility of representing the correlations among regions as a lower dimensional space. The graph shows how regional output growth within Europe is almost one-dimensional in 1999-2009.[11]

The graph on the right hand side depicts Spectral Clustering (SC). Finding the number of connected components of Γ is equivalent to estimating the rank of Γ (Trebbi and Weese, 2015). Let us indicate such rank as J and λ_k be the $k-$largest eigenvalue of Γ. Asymptotically, the first J of these eigenvalues will be positive and bounded away from zero, while the remaining $N - J$ will hover around zero. We report the lowest eigenvalues of Γ (i.e. we try to visualize λ_k for $k \leq N - J$). Such statistic has the same intuition of standard screeplots. A reduction in the number of estimated clusters is evident, as in the 1999-2009 period the curve moves away from zero faster than for the 1980-98 period, indicating fewer clusters in 1999-2009.

Figure 1.5 here

I.E Discussion

The early phase of European integration in the 1980s and 1990s, which coincided with the development of the single market, saw economic convergence

[10] More precisely, Spectral Clustering levers on the spectral properties of the graph that is associated to the similarity matrix of the problem, which, for us is the matrix of real GDP correlation coefficients among regions, Γ. Just to see where the graph comes from, think of each correlation coefficient as telling us the strength of the link among two regions. So the correlation matrix is essentially equivalent to the adjacency matrix of a weighted undirected graph, where nodes are regions and the link weights are given by the correlation coefficients. It turns out that counting clusters in this network is the same as trying to find the number of connected components of the graph (visually, the bundles of nodes tight to each other, but far away from other bundles). Trebbi and Weese (2015) offer additional discussion of some of these methodologies.

[11] Virtually identical result are obtained if we restrict ourselves to EMU countries.

and catch-up growth by the poorer countries. This convergence slowed down in the second phase of European integration that coincides with the single currency, namely from the late 1990s and until 2008. On the other hand, the single currency period was associated with an increased co-movement in regional output growth at the yearly frequency, especially between the core countries of the EMU, but also between core and periphery of the EMU, and between regions inside and outside the EMU. Finally, overall income inequality remained stable between the mid-1980s and the onset of the financial crisis.

II Cultural Divergence

Europeans have not become culturally more similar during the last three decades.

Several arguments would lead us to expect cultural convergence from 1980 onward. First, as argued before, this was a period of economic integration, with more mobility of goods, capital, and people within Europe. Increased economic exchange should strengthen mutual adaptation and understanding.[12] Second, economic convergence should lead to convergence of cultural traits. Third, the single currency led to correlated economic shocks (e.g. of monetary nature) and policy coordination in Europe. This may also reinforce cultural similarities, as national media and public debates devote more attention to common European issues. Fourth, this period was not associated with an increase in income inequality, which could have bred cultural divergence. On the other hand, there are also some more subtle reasons for expecting divergence. Trade integration changes relative prices and the structure of production, leading different countries to specialize in different sectors and in some cases this can push countries towards cultural divergence. (Olivier, Thoenig and Verdier, 2008). Moreover, sharing common economic policies can increase conflicts and antagonize public opinions (Feldstein, 1997).

We consider a broad range of questions in waves 1 to 4 of the European Value Surveys (EVS), which are approximately ten years apart, with the first one in 1980-81 and the last one in 2008-9. We have data for the same EU 15 countries plus Norway considered in the previous section, although for a few countries the first two waves are missing.[13] We selected several (longi-

[12] See Norris and Inglehart (2009) for qualitative discussion.

[13] The first wave is missing for Austria, Greece, Luxembourg, Portugal and Finland.

tudinally harmonized) questions asked in all waves, which capture attitudes towards five sets of issues extensively studied in the literature.[14] Because in Section V we compare Europe and the US, a criterion for selecting questions was also the availability of comparable questions in the General Social Survey (GSS) for the US.

The issues are: i) *Religiosity*, namely questions that seek to capture the strength of religious beliefs and principles (including acceptance of euthanasia and suicide) and the adherence to religious practices. ii) *Sexual morality,* such as attitudes towards homosexuality, divorce, and abortion. iii) *Gender equality*, concerning the role of women in the work place and in the family. iv) *Role of the state,* namely questions eliciting beliefs on the role of the state vis-à-vis the market, the desirability of redistribution, the respondent's left to right ideology, whether success in life reflects effort or luck. v) *Cultural capital,* namely questions eliciting general social values and attitudes towards others, like generalized trust or specific virtues appreciated in children such as obedience, hard work and unselfishness. Note that these questions relate to deep cultural beliefs, some of which evolve relatively slowly over time, and that are not particularly sensitive to business cycle fluctuations.[15] They seek to capture fundamental cultural traits and values that may be considered as prerequisite for sharing common political institutions and identities. The full set of questions is listed in a Table A.2 in the online Appendix. [16]

We purposely consider a broad set of cultural traits above and beyond economic issues. We are not discussing here the formation of, say, a free trade area, but a full political union. A "nation" in order to survive needs a certain amount of commonality of fundamental views above and beyond mere economic philosophies[17]. In any event, in the online Appendix we show

Moreover, the first wave was asked only for West Germany. The second wave is missing for Greece and Luxembourg.

[14] See for instance Alesina and Giuliano (2014, 2015), Guiso, Sapienza, and Zingales (2015), Tabellini (2008).

[15] See Giavazzi, Petrov, and Schiantarelli (2014) on this point and Alesina and Giuliano (2015) for a broader discussion of the evolution of cultural values in relation to institutional changes.

[16] Like in any multi country survey it is possible that the same question asked in different language may lead to some measurement error because the questions may not be interpreted identically in every country. Below and in Appendix we discuss issues on measurement error which relate also to this point.

[17] See Brunnermeier et al. (2016) for a discussion of these economic differences in the EU.

robustness to the selection of cultural traits considered by limiting the subsets of cultural traits to the role of the state and cultural capital alone.

We also consider a set of individual socio-economic covariates, such as age, education, occupation etc. which are likely determinants of cultural traits, listed in Table A.3 of the Appendix. They are all coded as binary variables. For computational simplicity, we only consider a random subsample of 250 respondents per country and for each wave (each survey has about $1,500$ respondents on average), but the results are robust to including 500 respondents per country-wave. The computational issues will become evident in the construction of the pairwise individual distance measures described in the following subsection.

II.A Cultural Differences

Here we only consider the questions and countries which were included in all four waves.[18] Since for each country-wave we have 250 individuals, our sample consists of $2,750$ individuals per wave[19]. Each individual corresponds to a vector in the N dimensional space of cultural attitudes and of socio-economic characteristics. Let $Y_{i,s}$ denote the entire $(N \times 1)$ vector of cultural dimensions for individual i in wave s, with elements $y_{i,s}$, and $X_{i,s}$ be the vector of his K socio-economic features, with elements $x_{i,s}$. They summarize the answers to the questions. We can construct a measure of *cultural distance* between individuals i and j in wave s based on the Gaussian Kernel as $d^Y_{i,j}(s) = 1 - \exp[-\theta\ (||Y_{i,s} - Y_{j,s}||)^2]$, where θ is the Kernel width and where $||Y_{i,s} - Y_{j,s}|| = [\sum_y (y_{i,s} - y_{j,s})^2]^{1/2}$ is the Euclidean distance. Socio-economic distance $d^X_{i,j}(s)$ between individuals is similarly defined. [20] We can compute

[18] They are Belgium, Denmark, France, Germany, the Netherlands, Norway, Italy, Ireland, Spain, Sweden, and the UK, and the included questions are those without an asterisk in Table A.2.

[19] Note that different individuals are sampled in each wave and we do not have a panel of survey participants.

[20] The parameter θ in the Gaussian Kernel is $\theta = 1/2\sigma^2$ where σ controls the width of the neighborhoods over which individuals are compared. For small σ, θ is large, implying that two individuals that are minimally different in their answers are deemed very far apart already. For large σ, θ is small, implying that distance away from a point increases at a slower rate. Note that this σ parameter is not the same as the variance of the answer to the questions in the population (which is normalized to 1 in all answers/dimensions here). σ is a parameter regulating the definition of distance in the answer space. We calibrate σ, i.e. the Kernel bandwidth, to the number of dimensions following Hainmuller

pairwise distances $d^Y_{i,j}(s)$, $d^X_{i,j}(s)$ for each pair of individuals per wave, giving $3,779,875 = (2,750 \times 2,749)/2$ total i,j pairs for each Y, X and each s. It is then clear why we impose a balanced number of individuals (250) for each country, as much of our analysis will evolve around generating distributions of pairwise individual distances $d_{i,j}(s)$.

A natural conjecture is that, as socio-economic distance $d^X_{i,j}(s)$ between two individuals increases, so does cultural distance $d^Y_{i,j}(s)$. To remove the effect of socio-economic distance, we can compute the *conditional cultural distance* between any two individuals, by conditioning each element of vector $Y_{i,s}$ on the vector $X_{i,s}$ (i.e. by taking the residuals of a set of regressions of each component $y_{i,s}$ on the entire vector $X_{i,s}$ and then computing the distance between these residuals for any two individuals).

We can then estimate non-parametrically the distribution of cultural distances between all individuals in our sample at different points in time. In particular, we can estimate the distribution of cultural distances between citizens of the same and of different countries in waves $s = 1, 4$. Comparing these two waves tells us how the distribution of cultural distances evolved during the last 30 years.

These distributions are in Figure 2.1. The densities are estimated using the Epanechnikov Kernel function. The dotted line refers to wave 1 (about 1980), the solid line to wave 4 (about 2009). The top two charts refer to unconditional distances, the bottom two to conditional distance. The left-hand-side charts refer to within-country cultural distances (that is, using distances generated by i, j belonging to the same country), the right hand side to distances among individuals of different countries. The more recent ($s = 4$) distribution is shifted to the right, both unconditionally and conditionally, and by approximately the same amount within and between countries. On average Europeans have become more dissimilar, both within and across countries.

Figure 2.1 here

This result, in part, may depend upon the distance metric used. The Gaussian Kernel function is a quadratic function and gives more weight to the dimensions across which the individuals appear most dissimilar. Estimating the same distribution of distances using the Cosine distance, $d^Y_{i,j}(s) = Y_{i,s} \cdot Y_{j,s}/||Y_{i,s}||\ ||Y_{j,s}||$, which does not place as much weight on large differences across specific cultural dimensions, gives two almost overlapping distributions

and Hazlett (2014).

in waves 1 and 4, both unconditionally and conditionally, and both within and between countries.[21] Thus, we can conclude that during the last 30 years there is virtually no evidence of cultural convergence, neither within nor across countries. If anything, we see cultural divergence.

While Figure 2.1 illustrates the overall distribution of cultural distance for all countries in our sample, we can also consider each country in isolation, focusing for simplicity on *average* cultural distance, rather than on the entire distribution of distances. This is done in Table A.4 in the on line Appendix. For each country, we report the change in average cultural distance between wave 1 and wave 4, within each country (columns 1 and 2), and between citizens of that country and European citizens from all other countries (columns 3 and 4), unconditionally and conditionally on socio-economic covariates. The last row reports the change in average distance, within and between all countries in the sample. All countries became more different from the others, and also within countries cultural distance increased over time by about the same amount. In wave 1 average cultural distance within and across countries is about 0.55 with our standardized measures. Thus, on average cultural distance between two random individuals increased by about 10% both across and within countries between 1980 and 2009 (the average change is slightly larger across than within countries). The change is also highly statistically significant, for all countries. The increase is particularly pronounced for Italy and Ireland, but there is no pattern concerning core versus periphery, or inside versus outside EMU. Finally, note that wave 4 dates to 2008-09, so before the sovereign debt crisis that plunged Southern Europe into a deep recession. In fact, some divergence could already be observed comparing wave 1 with wave 3 (sampled in 1999-2000).

II.B Specific Cultural Traits

We now consider changes in specific cultural traits and include all 16 countries and all questions. For each of the five broad issue categories (religiosity, sexual morality, gender equality, role of the state, and cultural capital), we extract the first principal component of the specific survey answers referring to that issue in the overall sample which pools together answers on all questions for all countries and all waves. The specific questions within each broad issue are generally highly correlated with the respective first principal

[21] These results are available from the authors upon request.

components, as shown in Table A.5 in the Online Appendix, except for the question on altruism, which we therefore omit from this part of the analysis. Throughout we only focus on country means.

Figures A.4.a-A.4.e in the online Appendix depict the EU average (the solid line) and each country average (the dots), of each of these first principal components. The figures refer to unconditional responses, but our results are very similar repeating the exercise on first principal components constructed conditioning on socio-economic covariates. Some change clearly took place, in almost all cultural dimensions: religiosity decreased on average, sexual morality and gender equality became less "traditional", and attitudes turned in favor of state intervention. Moreover, for all these dimensions except the last one (role of the state), the dispersion between country averages appears to have increased over time or remained constant. This is generally visible from the figures, and it is confirmed by the analysis of the standard deviation across countries (limiting the sample of countries to only those that are sampled in waves 1-4).

Finally, we find that in four out of five cases the divergence is due to several Northern European countries accentuating their differences relative to the EU average in the more recent waves, and likewise to several Southern European countries (most notably Greece, Italy, and Portugal) moving in the opposite direction relative to the EU average. In other words and in the terminology of Inglehart (1997), while Northern Europe is becoming more "modern" at a faster pace than the EU average, Southern Europe (with the exception of Spain) follows the general trend, but it is increasingly lagging behind. Results are displayed in Figures A.5-A.9 in the online Appendix.

II.C Discussion

The evidence discussed above suggests that European citizens have not become more similar to one another over the last 30 years. The lack of cultural convergence also cannot be attributed to persistence in cultural traits. Individual traits have changed: all of Europe has become more secular, less traditional and more tolerant, and also more inclined to accept a larger role of the state in risk sharing and redistribution. Moreover, the lack of cultural convergence (or the cultural divergence) cannot be blamed to an increase in inequality.

III Institutional Divergence?

A priori one would expect to see institutional convergence in Europe. Harmonization of policies and institutions was an explicit goal of the process of European integration in several areas like product and financial market regulation. Even where member states retained unconstrained sovereignty, Europe often provided benchmarks and incentives for harmonization and to diffuse best practices, particularly with the so called Lisbon Strategy.[22] On the other hand, deeper integration may have also set in motion countervailing forces pushing toward institutional divergence. As trade barriers fall, countries are led to specialize in different tradable goods sectors. Moreover, the single currency led to a real exchange rate appreciation in Southern vs Northern Europe. This, in turn, shifted resources towards the nontradable sectors in Southern Europe, while the opposite happened in some Northern European countries. These opposite changes in the structure of production may have altered government incentives and policies and leading to institutional divergence.[23]

We consider a wide range of institutional outcomes, in five specific policy areas: *i.a) Quality of government and of public administration.* Here we extract the first principal component from three sets of variables, which aggregate information about the quality and timeliness of the information provided by public administrations, the extent to which the executive can be held accountable by voters, the effectiveness and quality of the bureaucracy, the absence of corruption in the public administration and in the political system.[24] *i.b) Governance Indicator* constructed as the principal component from a number of World Bank Worldwide Governance Indicators, similar to those measured by the Quality of Government index above *ii) Quality of legal*

[22] Learning from other European countries also became more salient in the policy debates, and this too may have led to institutional convergence, as in Buera et al. (2011).

[23] Levchenko (2007) and Nunn (2007) study institutions as a source of comparative advantage, while Tabellini (2008) shows how culture too can be a source of comparative advantage. These papers treat institutions (or culture) as exogenous. Do and Levchenko (2009) study a theoretical model where a reduction in trade costs can lead to institutional deterioration.

[24] Some of the underlying components of the original variables are coded on the basis of hard information, others are based on surveys and report perceptions about the quality of government or the absence of corruption. The correlation coefficients between the extracted first principal component and the three underlying variables is always very high, ranging from 0.8 to 0.9.

institutions. This variable aggregates a variety of indicators based on perceptions about the quality of the legal system, such as property right protection, judicial independence, court impartiality, the rule of law, civil liberties. The primary sources are institutional classifications compiled by the Fraser Institute, the World Bank, the Heritage Foundation, ICRG, and Freedom House. *iii) Education.* Here we use the first principal component of PISA test scores in mathematics, science, and reading comprehension. *iv) Regulatory Environment.* Here we use the variable Product Market Regulation in the OECD data base, a summary indicator of the regulatory environment in a broad range of areas, including state control and involvement, barriers to entrepreneurship and barriers to trade and investment. A full list of the variables in each of these areas, with the corresponding sources and periods of availability, is in Table A.6 of the online Appendix.

We start by asking whether we observe convergence or divergence in these institutional outcomes between countries, by examining Sigma convergence plots. Thus, Figures 3.1.a-3.1.d plot the standard deviation (across countries) of each of the four broad indicators over time.[25] The quality of the public administration converged between countries in the 1980s and 1990s, but since 2000 diverged sharply, and by 2010 dispersion was above its initial point. The same pattern emerges from the Governance indicators, available only from the late 1990s onwards. The quality of legal institutions too is available only from 1990 onwards. Here too we observe divergence, particularly since 2000.[26] PISA scores converged, although the data is available only every three years between 2000 and 2012**.** Product market regulation converged (data is available from 1998 every 5 years), and this was an explicit EU policy goal. Conditioning on per capita income does not change the picture much.[27]

Figure 3.1.a - Figure 3.1.d here

[25] In the quality of government plot, Germany and Luxembourg are omitted because data are available for only some years. In the plot with PISA scores, the year 2003 is missing for the UK.

[26] These results are constent with, and complement those of Papaioannou (2016).

[27] Specifically, we regressed each variable on the log of real per capita GDP from the Penn World Tables, and then where necessary we extracted the first principal component from the residuals of each variable. The first period of convergence in the quality of government is much dampened, but the divergence since 2000 remains pronounced. For the quality of legal institutions and for the PISA scores, conditioning on per capita income does not change the results illustrated above. Convergence in product market regulation is not evident anymore, however.

Like for culture, the divergence in quality of government and legal institutions is largely driven by Southern Europe (mainly Italy, Greece, and Portugal) deteriorating relative to the European average, and some of the Nordic European countries improving relative to the average. In the two areas where there has been convergence, education and regulation, the process seems uniform, with most countries converging, from above or from below the European average. Figures A.10-A.13 in the on line Appendix highlight these patterns.

III.A Discussion

The observed convergence in product market regulation was a deliberate policy goal. The observed convergence in PISA scores is less obvious. The divergence in the quality of institutions is surprising. A conjecture is that trade integration and the single currency affected the structure of production and the allocation of resources of European countries. Member states that enjoyed an institutional comparative advantage accentuated their specialization in sectors where these advantages were relevant for productivity. Those with a comparative disadvantage moved in the opposite direction. The single currency reinforced this tendency, because it led to exchange rate appreciation in Southern Europe, pushing more resources in the nontradable sectors (where institutions are less important determinants of aggregate productivity). These changes, in turn, could have altered political incentives in opposite directions in these two groups of countries.[28]

IV Cultural Heterogeneity within the EU

The previous sections showed that Europeans have not become more similar in their cultural traits. Does this mean that Europeans cannot form a political union? The answer to this question depends on the level of heterogeneity and not just on whether it is decreasing or increasing over time. In this section we compare the level of heterogeneity within vs between coun-

[28] Work by Calligaris et al. (2016) highlights that a similar phenomenon may have occurred even within countries. In Italy for instance the effect of the common currency increased the difference between modern sectors and firms which took advantage of European integration and others which fell further behind. The difference is quantitatively striking. See also Gopinath et al. (2015).

tries. Take an individual country in Europe, say France. This country is a well functioning democracy and manages to accommodate a certain cultural heterogeneity among the French. How much larger is heterogeneity between citizens of different EU countries, compared to what we observe within each country? If Europe as a whole is not much more heterogeneous compared to each country in isolation, then what prevents further political integration in the EU is not be cultural differences per se. Throughout this section we use all the cultural variables described in Table A1 focusing on wave 4 only.

IV.A Cultural Distance Between Europeans

Figure 4.1 shows the distribution of cultural distance between pairs (i, j) of individuals sampled within the same country (dotted line) and in any pair of different countries (solid line). The left-hand-side figure highlights that there is a slightly lower average and median distance within country than across countries, but the differences are quantitatively small. The right-hand-side picture shows the same result using the residuals of the regression of cultural distances on socio-economic distances. There is only a slightly larger uniformity between countries.

Figure 4.1 here

These results are consistent, although in a different context, with those by Desmet, Ortuño-Ortín and Wacziarg (2016), who find that in ethnic groups in 76 countries which they study "within-group variation in culture trumps between-group variation". They suggest that even relatively small differences in between countries cultural attitudes may become important precisely because they are associated with a feeling of belonging to separate entities (ethnic groups in Desmet et al. (2016) or countries in our case).

Could these results be driven by measurement error, as pairwise distances are the result of aggregation over many noisy answers at the individual level? If within-country cultural distance is observed with noise, the observed within-country variance would be inflated. In the Appendix we formalize this assessment. We show that, in order to produce a within-country variance that is misleadingly larger than the cross-country variance of the country means, the variance of the individual measurement errors must be more than 9 times larger (about an order of magnitude) than the true cross-country variance in the country means. In essence, saying that this result

is driven by measurement error is equivalent to implying that the individual EVS are essentially uninformative (roughly, a 1/10 signal to noise ratio), which seems implausible.

To check that this methodology can capture differences between countries, we repeat this exercise focusing on Turkey, a possible candidate member state, but one with substantially different religious, economic, and historical background than many EU countries. In Figure 4.2, the left graph displays the distribution of cultural distances between Turkey and overall EU (solid line) and within Turkey (dotted line). On the right we show the same for the distribution of cultural residuals.[29] This graph looks starkly different from Figure 4.1, and here we clearly observe much more heterogeneity between Turkish citizens and EU respondents than within Turkey. Taking into account socio-economic characteristics does not reduce the between country distance by much.

Figure 4.2 here

IV.B Cultural, Socio-economic, and Geographic Distance

If culturally different regions are also at opposite geographic borders of the political area, political integration is more difficult. Similar considerations apply to socio-economic distance. To address these questions, we estimate the following linear regression:

$$d^Y_{i,j} = \alpha + \beta d^X_{i,j} + u_{ij} \tag{1}$$

where $d^Y_{i,j}$ indicates cultural distance between individuals i and j (in wave 4), $d^X_{i,j}$ their socio-economic distance, $u_{i,j}$ is an unobserved error term, and i and j can belong to the same or to different countries depending on the sample specification. Below we will also estimate equation (1) but on the right hand side we replace $d^X_{i,j}$ with geographic distance, $d^G_{i,j}$, based on the (NUTS3) region of residence of the respondents.[30]

[29] Because of data availability the individual observations used for Turkey are much less than for the other countries, but still we get a reasonable amount of pairs of Turkish with non Turkish individuals. In total the pairs of individuals where one is Turkish are more than 7,000.

[30] Geographic distances are computed using the Haversine formula.

Socio-economic Distance Figure 4.3 plots the regression line, with $d^X_{i,j}$ referring to socio-economic distance, for individuals in the same country (the dashed line) and in different countries (the solid line). [31] Cultural distance is positively related to socio-economic distance, and the slope coefficient β is about the same within and across countries. Although $d^Y_{i,j}$ and $d^X_{i,j}$ are roughly of the same size, the magnitude of the estimated intercept α is about ten times larger than the slope coefficient β. The intercept α of this regression gives us the average cultural distance for two individuals of the same socio-economic status, $d^X_{i,j} = 0$ (belonging to the same or to different countries depending on the sample). Two individuals socio-economically identical that come from the same country differ on average 0.52 units in their cultural traits, while two socio-economically identical individuals from two different countries differ approximately 0.58 on average. This confirms two properties of the data. First, socio-economic distance explains only a small portion of cultural distance; second, different countries do differ in cultural traits, but this difference is small compared to the average within-country distance.

Figure 4.3 here

Estimating the same regression line for citizens of different pairs of countries, or for the same country, we can estimate average bilateral distances between countries or within each country. This is what we show in Table 4.1, that reports the estimated values of the intercept α, for all countries in our sample and for the EU as a whole (we omit standard errors and the estimates are always highly significant). The diagonal elements restrict the sample to individuals i and j belonging to the same country. The off-diagonal elements are estimated for i in the row country and j in the column country. Thus, the first row in the Table displays the average distance between two Austrians with the same socio-economic features, then between an Austrian and a Belgian with the same features, and so on. Average distances between countries vary between 0.52 and 0.64. Average distance of individuals in the same country (on the diagonal) varies between 0.5 and 0.6, and are not much smaller than the off-diagonal elements. In addition, by looking at the diagonal entries we do not see countries which are much more homogeneous than others (Scandinavian countries tend to be more homogeneous, but the

[31] Confidence intervals are adjusted for two-way clustering at the country of residence of each individual.

patterns are not very precise).[32]

Table 4.1 here

Geographic Distance Next, we estimate the same regression line (1) , but replacing $d^X_{i,j}$ with geographic distance $d^G_{i,j}$ (again, for individuals belonging to the same or to different countries, and with two-way clustered standard errors). Figure 4.4 displays the estimated regression lines. Again, the slope is positive and significant (and of about the same size as for the between countries regression), but its value is negligible compared to the intercept (i.e. compared to average distance among individuals living in the same region) - note that the order of magnitude of $d^Y_{i,j}$ and $d^G_{i,j}$ is about the same. Two individuals from very geographically far regions in different countries differ between them not more than 0.02 in cultural distance units. Thus geographic distance, like socio-economic distance, is positively correlated with cultural distance, but it does not explain much of the observed cultural heterogeneity (the R^2 of the regressions are small).[33]

Figure 4.4 here

IV.C The Cultural Center of Europe

Knowing the region of residence of each respondent, we can compute the cultural distance of each region from the average cultural traits in Europe as a whole. In other words, we can locate the cultural core of Europe and its cultural periphery. Here we use wave 4 only, and we sample 500 individuals per country.

Consider the $(N \times 1)$ vector Y_i of cultural attitudes for individual i defined in Section II. We use the notion of geometric center or centroid of a set of points. The centroid of a set of vectors is their vector mean, $\bar{Y}$. It can be computed as the solution of the following problem

$$\bar{Y} = \arg\min_{Z} \sum_{i} (||Z - Y_i||)^2,$$

[32] We also compared the standard deviations of the within and cross-country distributions of bilateral distances, and they are approximately of the same order of magnitude, suggesting that the dispersion in cultural distances is similar within and across countries.

[33] Fazio and Lavecchia (2013) also show that generalized trust is spatially correlated, also for regions belonging to different countries.

where $||\ ||$ is the Euclidean distance. The vector $\bar{Y}$ can then be thought of as the "cultural center" of Europe. We can then compute the distance of any individual i from the vector $\bar{Y}$ in the same way described in Section II, namely as $d_i^Y = 1 - \exp[-\theta \left(||Y_i - \bar{Y}||\right)^2]$. Since we know the region of residence of each respondent i, we can then compute the average cultural distance of each region from the centroid $\bar{Y}$. We illustrate our findings in Figure 4.5. Lighter colors denote smaller cultural distances from the cultural center. The closest countries to the centroid are Germany and Austria. But Belgium, the Netherlands, and some regions in Spain and Portugal are also relatively close. Much more distant are France, Italy (particularly Southern Italy), Greece, and Ireland. The sharp distance of France from the centroid (and from Germany) is consistent with the argument by Brunnermeier et al. (2016). Figure 4.5 also shows much regional variation within countries. For instance, Northern Italy is much closer to the centroid than Southern Italy. There is vast heterogeneity in the UK as well, which is consistent with vast regional variation in the 2016 vote for Brexit.

Figure 4.5 here

Are individuals closer to the cultural centroid of Europe more in favor of European integration ? To address this issue, we exploit a question in the EVS that asks whether one is afraid of possibly adverse consequences of European integration in a number of policy areas.[34] We extract the first principal components of all these fears and regress it on cultural distance from the centroid of Europe in the full sample of our individuals, controlling for socio-economic covariates. The results are displayed in Table 4.2. Standard errors are clustered by region. To facilitate the interpretation, the dependent variable (fear of European integration) is normalized to lie between 0 and 1. Distance from the cultural centroid is always highly significant (also when controlling for individual socioeconomic covariates and regional or country fixed effects) and with the expected sign: being more afraid of European integration is positively correlated with distance from the cultural centroid. Nevertheless, the magnitude of the estimated coefficient is not large. The estimated value of -0.071 in column (4) implies that reducing cultural distance from its average value of about 0.62 to its minimum of about 0.26

[34]The fears associated with the building of the EU listed in the questions are: loss of social security; loss of national identity; our country paying more to the EU; a loss of power in the world; the loss of jobs.

would reduce fear of European integration by about 6% of its average value - recall that fear of European integration has been normalized to lie between 0 and 1. Thus, not only Europeans are very similar to each other, but cultural heterogeneity does not seem to be so important for attitudes in favor or against Europe. This is a further indication that cultural heterogeneity per se does not seem to be the main stumbling block preventing further European integration.

Table 4.2 here

IV.D Discussion

Within-country heterogeneity in cultural differences swamps cross-country heterogeneity. Cultural heterogeneity is also related to geographic and socio-economic dimensions, but most of it is unexplained. The European countries we considered are well functioning democracies, despite the large internal variance in cultural traits we highlight. These findings thus suggest that, the extent of cultural differences across European citizens living in different countries should not be an obstacle to further European political integration. This inference is further reinforced by the finding that cultural distance, although correlated with attitudes against European integration, only explains a small fraction of these attitudes.

V Comparing the US and the EU

V.A Data

For the US we use the General Social Survey (GSS). In line with Winston Churchill's conception of a "United States of Europe", one could equate US states with EU member states, but available data from the GSS are not sufficiently rich and small states have too few respondents. We consider only nine (large) states for which we have enough observations: California, Florida, Illinois, Michigan, New York, North Carolina, Ohio, Pennsylvania, and Texas.[35] As an alternative, we also aggregated all states into five macro regions and all our results were very similar.

[35] The 9 states we selected reach 60 observations in most of the waves. In a few cases they do not (the lower bound is Illinois in wave 2, that has 39 surveyed individuals who replied to all the questions).

A second problem is that the question asked in the GSS are not identical to (and are fewer than) those in the EVS. In the online Appendix we describe exactly how we did the matching between GSS and EVS. The GSS questions we use are listed in Table A.7 and are a subset of the questions used for Europe. These questions cover the same five sets of issues included in the analysis of Europe, although in some cases fewer questions are included under some topics. In the static analysis of within versus between US states heterogeneity, and where we compare the US to the EU, a total of 15 questions are available.[36] An asterisk denotes the 6 questions that were not available in wave 1, and that thus are not used in the analysis of cultural convergence.[37] Finally, Table A.3 of the online Appendix lists the socio-economic covariates we use in the analysis of GSS data.

V.B Economic and Cultural Convergence in the US

Let us begin with economic convergence. Barro and Sala-i-Martín (1992) study a long-term panel on personal income that goes back to 1840. They show that some Beta convergence across US states took place. As Ganong and Shoag (2012) note, average per capita income in Connecticut was 4.37 times larger than income in Mississippi in 1940. This ratio had reduced to 2.28 in 1960 and was down to 1.76 in 1980. Over the same period, the authors also show evidence of Sigma convergence except for some temporary shock (e.g. the Civil War). During the last 30 years the convergence process has slowed down. The slope of the convergence relationship has fallen by more than 50% if we compare the subperiods 1940-1960 and 1990-2010 (Ganong and Shoag, 2012). The Connecticut to Mississippi income ratio in 2012 was 1.77, the same as in 1980.[38] From the work of many scholars (e.g. Piketty and Saez, 2003; Piketty, 2014) we also know that income inequality in the US

[36] In the GSS the questions of approval of abortion, approval of homosexuality, feeling of control over one's own life, belief in God, are asked in subsamples of individuals for whom other questions are not available. We thus exclude them from the analysis.

[37] The GSS is run every other year. To match the EVS waves, we thus grouped GSS data as follows: the surveys of 1984 and 1986 correspond to wave 1, those of 1990, 1991, 1993 to wave 2, those of 1998 and 2000 to wave 3, and those of 2006, 2008 and 2010 to wave 4.

[38] Ganong and Shoag (2012) argue that labor mobility played a central role in income convergence. During the period of strongest convergence, until 1980, population flowed from poor to rich states, and initial income could well predict changes in population. In present days, this pattern has largely disappeared

has increased significantly in the last few decades (contrary to our findings for the EU countries reviewed above).

As in Europe, we find that between 1980 and 2010 cultural diversity increased both across and within US states, both in absolute terms and conditioning on socio-economic status. These results are displayed in Figures A.14 and in Table A.8 in the online Appendix. Distance did not increase in all cultural dimensions. Dispersion increased in attitudes towards the role of the state, sexual morality, and gender equality. Individuals seem to have become more similar in their religious beliefs and cultural capital.[39]

Notice that even if our results on economic and cultural convergence are similar in the EU and US, the underlying mechanisms need not be the same. In the US, the increase in cultural dispersion is consistent with the increase in political polarization among voters and political parties (e.g. McCarty, Poole and Rosenthal, 2016) which, in turn, may be related to the increase in income inequality. In the EU the explanations may be related to specialization and institutional divergence. Further research on this point is warranted.

V.C Cultural Distance Within and Across US States

We now compute cultural distance within and across US states and compare it the EU, using the latest waves of GSS and EVS. For the US we now use all the available questions. When directly comparing the EU to the US, we use the subset of questions in the EVS corresponding to those available in the US. The left hand side of Figure 5.1.a, which is the analog of Figure 4.1, shows the distribution of distance between pairs of individuals in the US within and across states. The right hand side reproduces the same picture for the distance in the residuals of culture on a set of socio-economic controls identical to the one used for Europe. These two figures do not show any difference in the distribution within and across states. Thus, unlike in Europe, there is no more heterogeneity between states compared to within states. As shown below, however, this is because inside US states there is more heterogeneity than inside individual EU member states. The between-states differences are about the same in Europe and the US.

[39] These results are available from the authors upon request. Also in Table A.8 of the online Appendix we show the same exercise performed in Table A.4. Average distance between individuals in different countries has increased between wave 1 and wave 4 in a statistically significant way, both conditionally and unconditionally on socio-economic covariates, by about 10%, approximately the same magnitude as for Europe.

Specifically, Figures 5.1.b-5.1.c compare the distribution of cultural distances in the US and Europe. The left hand side of Figure 5.1.b depicts the distribution of (unconditional) cultural distance between individuals living in *the same* US state (solid line) and the same European country (dotted line). The right hand side does the same for the distributions of distances in the residuals (i.e. conditioning on socio-economic covariates). Figure 5.1.c refers to the distribution of cultural distances for individuals living in *different* US states and European countries (solid and dotted lines respectively). There is more diversity within a US state than within a EU country - the US distribution of cultural distance is shifted to the right compared to the European distribution. Instead, we do not observe more diversity across US states than across EU countries (average distance between US states is about the same as between European countries). Europe as a whole is not less culturally heterogeneous than the US.

Figure 5.1.a-c here

V.D Cultural, Socio-economic and Geographic Distance: US versus Europe

Socio-economic Distance As for Europe, we regress cultural distance $d^Y_{i,j}$ on socio-economic distance $d^X_{i,j}$, following equation (1). Figure A.15 in the online Appendix depicts the regression lines for individuals living in the same US state and in two different ones. The two regression lines almost overlap, in accordance with the finding in the previous subsection that the distribution of cultural distance is the same within and between states. As in Europe (Figure 4.3), the slope is positive, but small relative to the intercept (recall however that in Europe we found small, but significant differences in the intercepts). Cultural distance is related to socio-economic distance (within and across states), but most of the cultural distance between individuals is unexplained by their observed socio-economic status.

As in Table 4.1 for Europe, we have estimated this same regression for individuals belonging to different pairs of US states. The intercepts are shown in Table A.9 in Appendix, which reports the average cultural distance between pairs of individuals of identical socio-economic level coming one from the row state and the other from the column state. First, the average distance between individuals of the same socio-economic level does not vary much across pairs of states (from a minimum of 0.54 to a maximum of 0.63

across different states, a similar order of magnitude as between European countries). Second, individuals of New York and California are on average more similar to each other than when compared to individuals of other states. This highlights the cultural similarity between two states on the opposite coasts.

Geographic Distance In Europe geographic distance, $d^G_{i,j}$, slightly contributes to explaining cultural distance, $d^Y_{i,j}$. This is not the case in the US. We find no correlation between geographical distance and cultural distance within the US as shown in Figure A.16 in the online Appendix. In the US geography does not explain cultural distance, in contrast to Europe. The reason may be greater mobility of people within the US than within Europe. As noted with reference to Table A.9 in the online Appendix, this may also be due to greater similarity between the two US coasts, than between each coast and the center states. This geographic pattern may facilitate political integration compared to Europe, where we see a North-South divide in economics, institutional quality and, to a smaller extent, also in culture.

V.E Discussion

A comparison between the EU and the US suggests that fundamental cultural differences among Americans are not bigger than among Europeans. Along this dimension, if Americans can share a well functioning federal union, so could Europeans. Needless to say, the US had 250 years of nation building and 150 years have gone by from the Civil War. Europe has had a much shorter common history and only 70 years have gone by since the last inter-European war. Americans share a common language, and geographic mobility in the US has been much higher than within Europe, or even within individual European countries. Mobility helped creating a melting pot and thus a common identity, but apparently did not dampen cultural heterogeneity.

VI Concluding Remarks

Europe is at a crossroads. As emphasized by the European Commission (2017), EU citizens are becoming impatient with their institutions and some major decisions have to be taken. The Commission believes that either the

European project is scaled down to a single market and free trade agreement, or it is pushed forward to deeper integration. "Muddling through" the current difficulties might be the easier solution in the short run, but it risks aggravating long-run prospects and further alienating European citizens who perceive the current situation as unsatisfactory.

But does Europe have the required fundamentals to become a viable political union? If the perceived benefits of integration are high, and cultural heterogeneity is relatively small and plays only a minor role, what prevents further steps towards a political union? We think that the answer is the heritage of nationalism. Europeans retain strong national identities, amplified by different languages, and the memories of past violent conflict are still too strong and recent to overcome mutual distrust (see Guiso, Sapienza and Zingales, 2009). Nationalist sentiments are on the rise, and this was true even before the financial crisis, which probably reinforced this extant tendency. Although there is much variation among countries, between 1980 and 2009 most Europeans have become more proud of their national identities: on average the percentage of respondents who are proud of their nationality has increased from 37% in the early 1980s to almost 50% in 2008-09, as shown in Table A.10 of the online Appendix. Nationalism probably increased further after the financial crisis, in line with past episodes (Funke et al. 2016 show that support for extreme right wing parties generally increases after financial crisis).

If Europe wants to proceed further along the road of political integration, an important challenge is to reinforce a common European identity and to reduce mutual distrust between different nationals. According to Eurobarometer surveys, Europeans seem ready to accept a transfer of sovereignty to the center in the provision of some global public goods like security, border control, environment protection. But a political union should also be resilient to economic shocks like the recent financial crisis, and this presupposes agreement on a (possibly minimalist) set of principles of risk sharing and solidarity. This in turn requires sufficiently strong feelings of mutual identification and of belonging to a recognized and legitimate political community. This prerequisite for political integration is not out of reach. Despite the rise of nationalism, European identity has not weakened. According to Eurobarometer surveys reported in European Parliament (2016), 51% of respondents say that they feel both national and Europeans in 2016, against 39% that feel only national. These numbers are not very different from those in the distant past. Thus, despite the recent difficulties, the European project

is still popular although struggling. Restoring economic growth and avoiding prolonged stagnation would certainly contribute to further improve its popularity .

In the long run, mutual distrust among Europeans can be reduced by expanding European educational initiatives. In the history of nation building, public education always played a major role (Alesina, Giuliano and Reich, 2017). The Erasmus program of student exchange works well, but the evidence suggests that it did not have a large impact in shaping European identities, probably because self-selected participants are already very pro-Europe (Sigalas, 2010; Wilson, 2011; Mitchell, 2011). If one agrees that further political integration would be a good idea, then this program could be expanded to reach more young people in high school or in technical institutions, and not just primarily university students. Moreover, school programs could be designed to include a more extensive curriculum covering European institutions and citizenship.

The feasibility of European political integration also depends on how it is achieved. The institutional foundations of the transfer of sovereignty have important implications on national vs European identification by citizens. Intergovernmental decision making in the Council inevitably increases perceived international conflicts and breeds mistrust, because national political delegation forces politicians to show to their respective constituency that they have "won" and brought home a good deal. Having a European policymaking institution in charge, instead, accountable to all European citizens either directly, or indirectly through the European Parliament, is more likely to encourage compromise. It can also accelerate the formation of European identities and the emergence of a European (as opposed to national) public forum, where European policy issues are discussed with a European perspective. But transferring political power from the Council to European institutions requires the consent of national governments, who may be jealous of their own prerogatives and may not accept the emergence of powerful European political actors. Exploring these institutional aspects of how to achieve further European integration is an important challenge for future analysis and policy discussion.

VII References

- Alesina, A. and Giuliano, P. (2014). *Family Ties.* In Aghion, P. and Durlauf, S. N. (Eds.) *Handbook of Economic Growth*, 2A, pp. 177–215. The Netherlands: North Holland.

- Alesina, A. and Giuliano, P. (2015). Culture and institutions. *Journal of Economic Literature*, 53(4):898–944.

- Alesina A., P Giuliano and B. Reich (2017). Nation Building and Education. *Mimeo*, Harvard University

- Alesina, A. and Spolaore, E. (1997). On the number and size of nations. *The Quarterly Journal of Economics*, 112(4):1027–1056.

- Alesina, A. and Spolaore, E. (2005). *The size of nations.* MIT Press.

- Atkinson, A. B. (2015). *Inequality.* Harvard University Press.

- Backus, D., F. Kydland and P. Kehoe. (1992). International Real Business Cycles, *Journal of Political Economy*, 100(4):745–775.

- Barro R.J. (1991). Small is Beautiful. *The Wall Street Journal,* October 11

- Barro, R. J. and Sala-i Martin, X. (1992). Convergence. *Journal of Political Economy*, 100(2):223–251.

- Beck T. and G. Underhill (eds.) (2017). Quo Vadis? Indentiy, Policy and the Future of the European Union *Vox Eu Org Book CEPR Press*

- Berry, C. R. and Glaeser, E. L. (2005). The divergence of human capital levels across cities. *Papers in Regional Science*, 84(3):407–444.

- Buera, Francisco J., Alexander Monge-Naranjo and Giorgio E. Primiceri (2011). Learning the Wealth of Nations, *Econometrica*, 79(1):1–45.

- Boldrin, M. and Canova, F. (2001). Inequality and convergence in Europe's regions: Reconsidering european regional policies. *Economic Policy*, 16(32):206–253.

- Brandolini, A. (2009). On synthetic indices of multidimensional well-being: Health and income inequalities in France, Germany, Italy and the UK. In Reiko Gotoh & Paul Dumouchel (Eds.), *Against Injustice: The New Economics of Amartya Sen*. pp. 221–251. Cambridge University Press.

- Brunnermeier, M. K., James, H., and Landau, J.-P. (2016). *The Euro and the battle of ideas*. Princeton University Press.

- Calligaris, S., Del Gatto, M., Hassan, F., Ottaviano, G., Schivardi, F., et al. (2016). Italy's productivity conundrum. a study on resource misallocation in Italy. Technical report, Directorate General Economic and Financial Affairs (DG ECFIN), European Commission.

- Coppedge, M., Gerring, J., Lindberg, S. I., Skaaning, S.-E., Teorell, J., Altman, D., Bernhard, M., Fish, M. S., Glynn, A., Hicken, A., et al. (2015). V-dem [country-year/country-date] dataset v5. *Varieties of Democracy (V-Dem) Project*.

- Desmet, K., Ortuño-Ortín, I., and Wacziarg, R. (2016). Culture, ethnicity and diversity. *National Bureau of Economic Research Working Papers*, w20989.

- Do, Q.-T. and Levchenko, A. A. (2009). Trade, inequality, and the political economy of institutions. *Journal of Economic Theory*, 144(4):1489–1520.

- European Central Bank (2008). *The EURO at Ten – lessons and challenges*. Proceedings of the Fifth ECB Central Banking Conference

- Eurobarometer (2016). Special Eurobarometer 451, Future of Europe, December.

- European Central Bank (2015). Real convergence in the euro area: evidence, theory and policy implications. *ECB Economic Bulletin*, (5):30–45.

- European Commission (2017) White Paper on the Future of Europe, March

- European Parliament (2016). Major changes in European public opinion regarding the European Union exploratory study. European Parliament Research Service.

- Falk, A. et al. (2015) The Nature and Predictive Power of Preferences. Global Evidence, *IZA Discussion Papers*, No. 9504

- Fazio, G. and L. Lavecchia (2013) Social Capital Formation across Space: Proximity and Trust in European Regions, *International Regional Science Review* 36(3): 296-321

- Feenstra, R. C., Inklaar, R., and Timmer, M. P. (2015). The next generation of the Penn world table. *The American Economic Review*, 105(10):3150–3182.

- Feldstein, M. (1997). The Political Economy of the European Economic and Monetary Union: Political Sources of an Economic Liability. *The Journal of Economic Perspectives*, 11(4), 23-42.

- Frankel, Jeffrey A. and Andrew K. (1998) The Endogeneity of the Optimum Currency Area Criteria *Economic Journal* July

- Funke, Manuel, , Moritz Schularick and Christoph Trebesch (2016) "Going to extremes: Politics after financial crises, 1870–2014", *European Economic Review*, vol. 88,C: 227-260

- Ganong, P. and Shoag, D. (2012). Why has regional income convergence in the us stopped? *Social Science Research Network*.

- Giavazzi, F., Petrov, I., and Schiantarelli, F. (2014). Culture: Persistence and evolution. *National Bureau of Economic Research Working Papers*, w20174.

- Gil-Pareja, S., Llorca-Vivero, R., and Martínez-Serrano, J. A. (2008). Trade effects of monetary agreements: evidence for oecd countries. *European Economic Review*, 52(4):733–755.

- Gogas, P. (2013). Business cycle synchronisation in the european union. *OECD Journal: Journal of Business Cycle Measurement and Analysis*, 1.

- Gopinath, G., Kalemli-Ozcan, S., Karabarbounis, L., and Villegas-Sanchez, C. (2015). Capital allocation and productivity in South Europe. *National Bureau of Economic Research Working Papers*, w21453.

- Guiso, L., Herrera, H., and Morelli, M. (2016). Cultural differences and institutional integration. *Journal of International Economics*, 99:S97–S113.

- Guiso, L., Sapienza, P., and Zingales, L. (2006). Does culture affect economic outcomes? *The Journal of Economic Perspectives*, 20(2):23–48.

- Guiso, L., Sapienza, P., and Zingales, L. (2009). Cultural biases in economic exchange? *The Quarterly Journal of Economics*, 124(3).

- Guiso, L., Sapienza, P., and Zingales, L. (2015). The value of corporate culture. *Journal of Financial Economics*, 117(1):60–76.

- Guiso, L., Sapienza, P., and Zingales, L. (2016). Monnet's error? *Economic Policy*, 31(86):247–297.

- Hainmueller, J. and Hazlett, C. (2014). Kernel regularized least squares: Reducing misspecification bias with a flexible and interpretable machine learning approach. *Political Analysis*, 22(2):143–168.

- Howell, L. D. (2011). International country risk guide methodology. *East Syracuse, NY: PRS Group.*

- Inglehart, R. (1997). *Modernization and postmodernization: Cultural, economic, and political change in 43 societies.* Princeton University Press.

- Jappelli, T. and Pagano, M. (2010). Financial market integration under EMU. In Buti, M., Deroose, S., Gaspar, V. and Nogueira Martins, J. (Eds.) *The Euro – The First Decade,* chapter 9 (pp. 315-353). Cambridge University Press.

- Kalemli-Ozcan, Sebnem, Papaioannou, Elias and Peydrò, José Luis (2103) Financial Regulation, Financial Globalization, and the Synchronization of Economic Activity Authors, *Journal of Finance*: 20, May

- Koske, I., Wanner, I., Bitetti, R., and Barbiero, O. (2015). The 2013 update of the OECD product market regulation indicators: policy insights for oecd and non-oecd countries. *OECD Economics Department Working Papers*.

- Kunčič, A. (2014). Institutional quality dataset. *Journal of Institutional Economics*, 10(01):135–161.

- Kutan, A. M. and Yigit, T. M. (2009). European integration, productivity growth and real convergence: Evidence from the new member states. *Economic Systems*, 33(2):127–137.

- Levchenko, A. A. (2007). Institutional quality and international trade. *The Review of Economic Studies*, 74(3):791–819.

- Luxembourg Income Study Database (LIS), multiple countries, 1980-2009.

- Mardia, K. V., Kent, J. T., and Bibby, J. M. (1979). *Multivariate Analysis*. San Diego: Academic Press.

- Mitchell , K. (2011). Rethinking the 'Erasmus Effect' on European Identity. *Journal of Common Market Studies*, 53(2): 330–48.

- McCarty, N., Poole, K. T., and Rosenthal, H. (2016). *Polarized America: The dance of ideology and unequal riches*. MIT Press.

- Norris, P. and Inglehart, R. (2009). *Cosmopolitan communications: Cultural diversity in a globalized world*. Cambridge University Press.

- Nunn, N. (2007). Relationship-specificity, incomplete contracts, and the pattern of trade. *The Quarterly Journal of Economics*, 122(2):569–600.

- OECD (2004). *Learning for Tomorrow's World: First Results from PISA 2003*. OECD Publishing, Paris.

- OECD (2007). *PISA 2006: Science Competencies for Tomorrow's World: Volume 1: Analysis*. OECD Publishing, Paris.

- OECD (2010). *PISA 2009 Results: What Students Know and Can Do: Student Performance in Reading, Mathematics and Science*, volume 1. OECD Publishin, Paris.
- OECD (2014). *PISA 2012 Results: What Students Know and Can Do: Student Performance in Mathematics, Reading and Science*, volume 1 - Revised edition. OECD Publishing, Paris.
- OECD/UNESCO (2003). *Literacy skills for the world of tomorrow: Further results from PISA 2000*. OECD Publishing.
- Olivier, J., Thoenig, M., and Verdier, T. (2008). Globalization and the dynamics of cultural identity. *Journal of International Economics*, 76(2):356–370.
- Papaioannou E. (2016) Needed: A European Institutional Union *Vox EU, February*
- Piketty, T. (2014). *Capital in the 21st* Century. Harvard University Press.
- Piketty, T. and Saez, E. (2003). Income inequality in the US, 1913–1998. *The Quarterly Journal of Economics*, 118(1):1–41.
- Portes, J. (2015). Labour mobility in the European Union. In Durlauf, S. N. and Blume L. E. (Eds.) *The New Palgrave Dictionary of Economics. Online Edition.* Palgrave Macmillan.
- Sigalas, E. (2010). Cross-border mobility and European identity: the effectiveness of intergroup contact during the ERASMUS Year Abroad. *European Union Politics*, 11(2):241–65.
- Spolaore, E. (2013). What is european integration really about? A political guide for economists. *The Journal of Economic Perspectives*, 27(3):125–144.
- Tabellini, G. (2008). Presidential address: Institutions and Culture. *Journal of the European Economic Association*, 6(2-3), 255-294.
- Trebbi, F. and Weese, E. (2015). Insurgency and small wars: Estimation of unobserved coalition structures. *National Bureau of Economic Research Working Papers*, w21202.

- Villaverde, J. and Maza, A. (2008). Productivity convergence in the European regions, 1980–2003: a sectoral and spatial approach. *Applied Economics*, 40(10):1299–1313.

  Wilson, I. (2011). What should we expect of the "Erasmus Generations"? *Journal of Common Market Studies*, 49(5):1113–40.

- Williams, A. (2015). A global index of information transparency and accountability. *Journal of Comparative Economics*, 43(3):804–824.

VIII Appendix: Measurement Error

Let y_{ic} be the observed cultural measure in country c for individual (or pair of individuals) i. Let the observed y_{ic} be a mismeasured proxy for the true latent cultural measure y^*_{ic}. Particularly assume the presence of idiosyncratic measurement error ε_{ic} and country-specific mismeasurement υ_c. We posit

$$y_{ic} = y^*_{ic} + \varepsilon_{ic} + \upsilon_c, \tag{2}$$

with ε_{ic} i.i.d. classic measurement errors and orthogonal to the (also i.i.d. and mean zero) υ_c Let us derive the mean and variance of y_{ic} within country c based on (2) -so taken relative to individuals i in country c, hence the subscript E_i, V_i used below. We obtain:

$$E_i(y_{ic}) = E_i(y^*_{ic}) + \upsilon_c, \tag{3}$$

and

$$V_i(y_{ic}) = V_i(y^*_{ic}) + V_i(\varepsilon_{ic}). \tag{4}$$

We can further compute the variance of country-specific means across different c's:

$$V_c(E_i(y_{ic})) = V_c(E_i(y^*_{ic})) + V_c(\upsilon_c). \tag{5}$$

Ad absurdum let us take the extreme case in which the measurement error is so large to potentially mask a within-country true variance of the latent cultural measure $V_i(y^*_{ic})$ that is less or equal to the observed cross-country variance in country means $V_c(E_i(y^*_{ic}))$ or

$$V_c(E_i(y^*_{ic})) \geq V_i(y^*_{ic}).$$

Then, consider that the measured within-country variance has to satisfy:

$$\begin{aligned} V_i(y_{ic}) &= V_i(y^*_{ic}) + V_i(\varepsilon_{ic}) \leq \\ V_c(E_i(y^*_{ic})) + V_i(\varepsilon_{ic}) &= V_c(E_i(y_{ic})) - V_c(\upsilon_c) + V_i(\varepsilon_{ic}). \end{aligned}$$

Rearranging this inequality yields:

$$V_i(y_{ic}) - V_c(E_i(y_{ic})) + V_c(\upsilon_c) \leq V_i(\varepsilon_{ic})$$

which implies that

$$V_i(\varepsilon_{ic}) \gg V_i(y_{ic}) - V_c(E_i(y_{ic})).$$

from our empirical estimates we know that $V_i(y_{ic}) \simeq 10 * V_c(E_i(y_{ic}))$. Hence, $V_i(\varepsilon_{ic}) \gg 9 * V_c(E_i(y_{ic}))$. Notice that $V_i(\varepsilon_{ic})/V_c(E_i(y_{ic}))$ can be read as the noise to signal ratio of the individual country survey relative to the benchmark of the (arguably better measured) cross-country dispersion of the culture measure $V_c(E_i(y_{ic}))$. $V_i(\varepsilon_{ic})/V_c(E_i(y_{ic})) \gg 9$

Figures and Tables

Figures 1.1 – 1.2

Figure 1.3

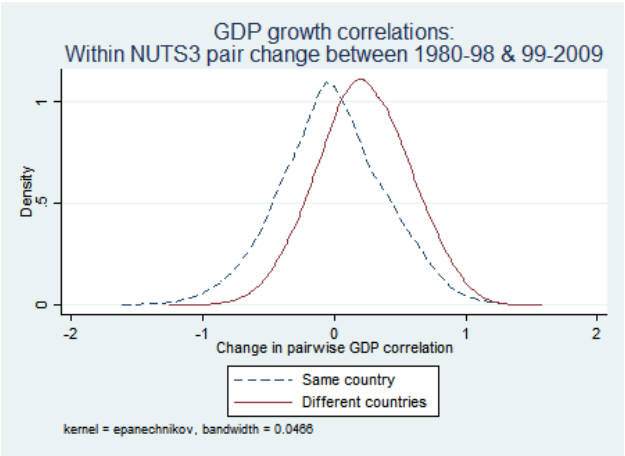


Figure 1.4

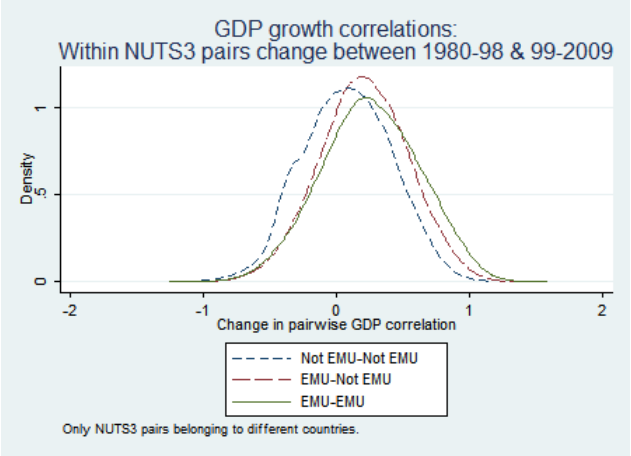


Figure 1.5

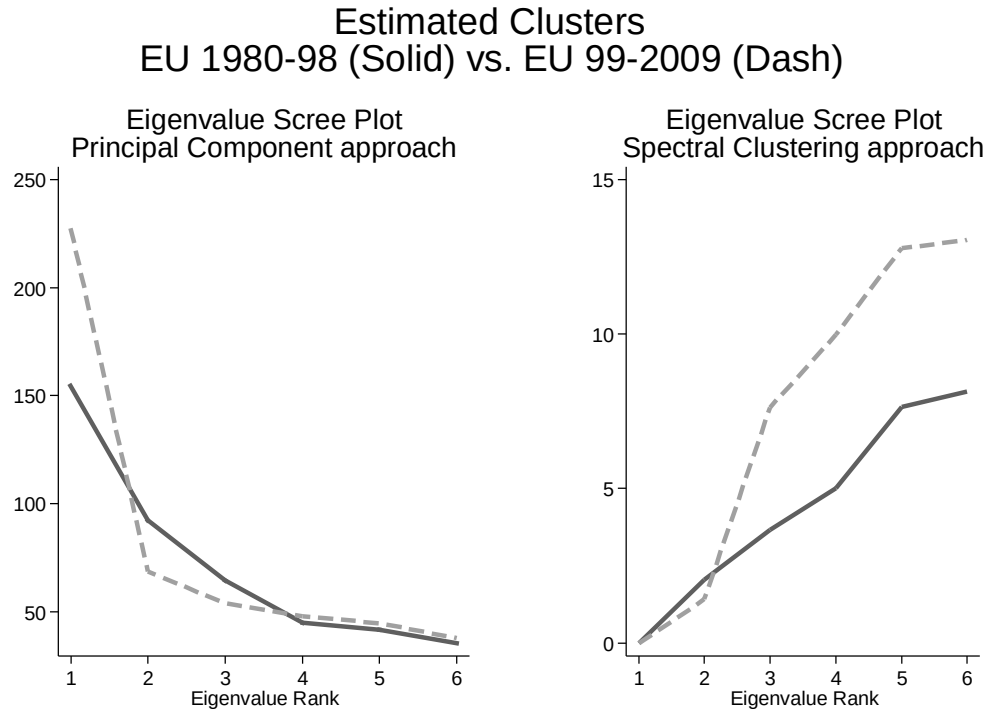
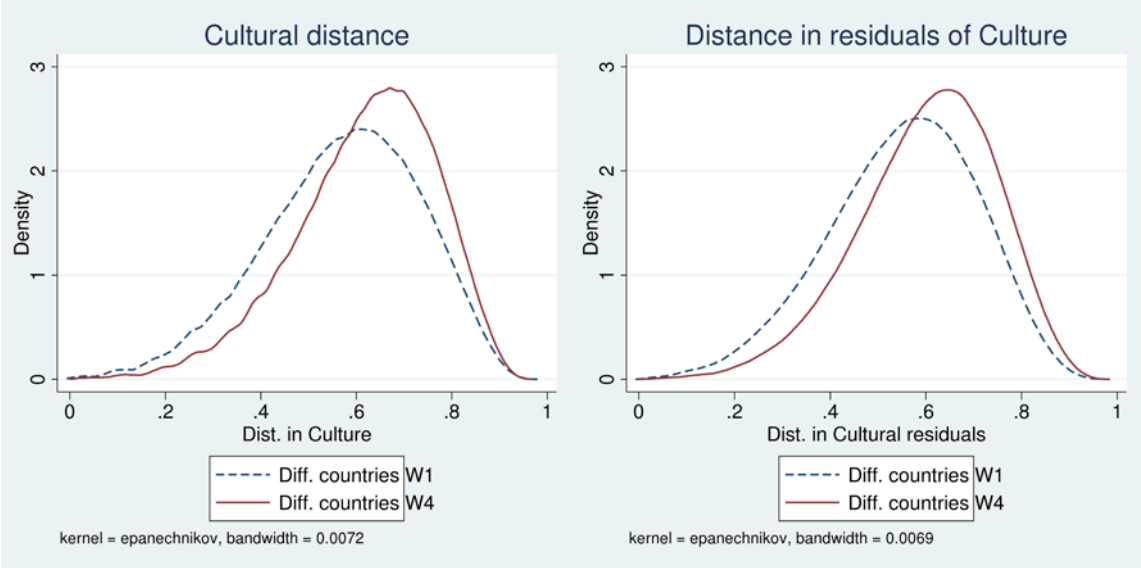
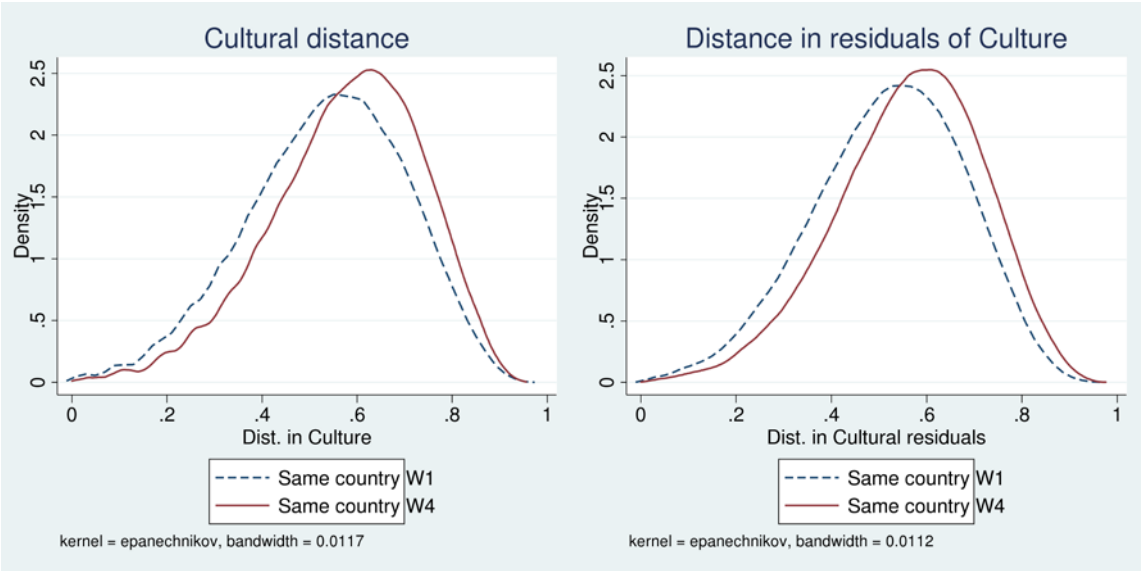
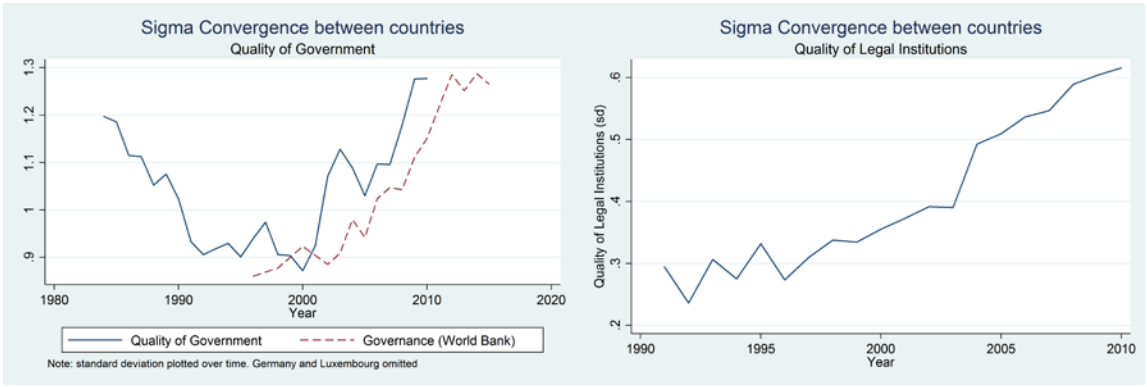


Figure 2.1


Cultural distance
Density
0
1
2
3
0
.2
.4
.6
.8
1
Dist. in Culture
Diff. countries W1
Diff. countries W4
kernel = epanechnikov, bandwidth = 0.0072
Distance in residuals of Culture
Density
Dist. in Cultural residuals
Diff. countries W1
Diff. countries W4
kernel = epanechnikov, bandwidth = 0.0069


Cultural distance
Density
0
.5
1
1.5
2
2.5
0
.2
.4
.6
.8
1
Dist. in Culture
Same country W1
Same country W4
kernel = epanechnikov, bandwidth = 0.0117
Distance in residuals of Culture
Density
Dist. in Cultural residuals
Same country W1
Same country W4
kernel = epanechnikov, bandwidth = 0.0112

Figures 3.1.a – 3.1.b



Figures 3.1.c – 3.1.d

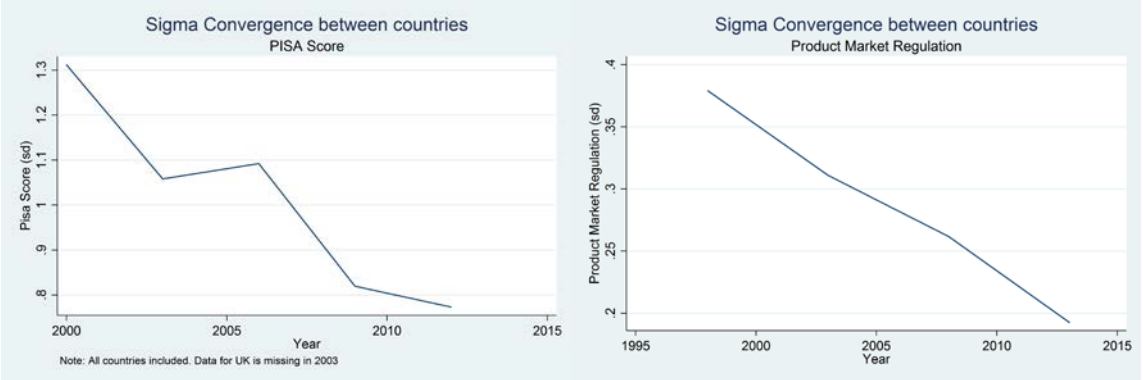


Figure 4.1

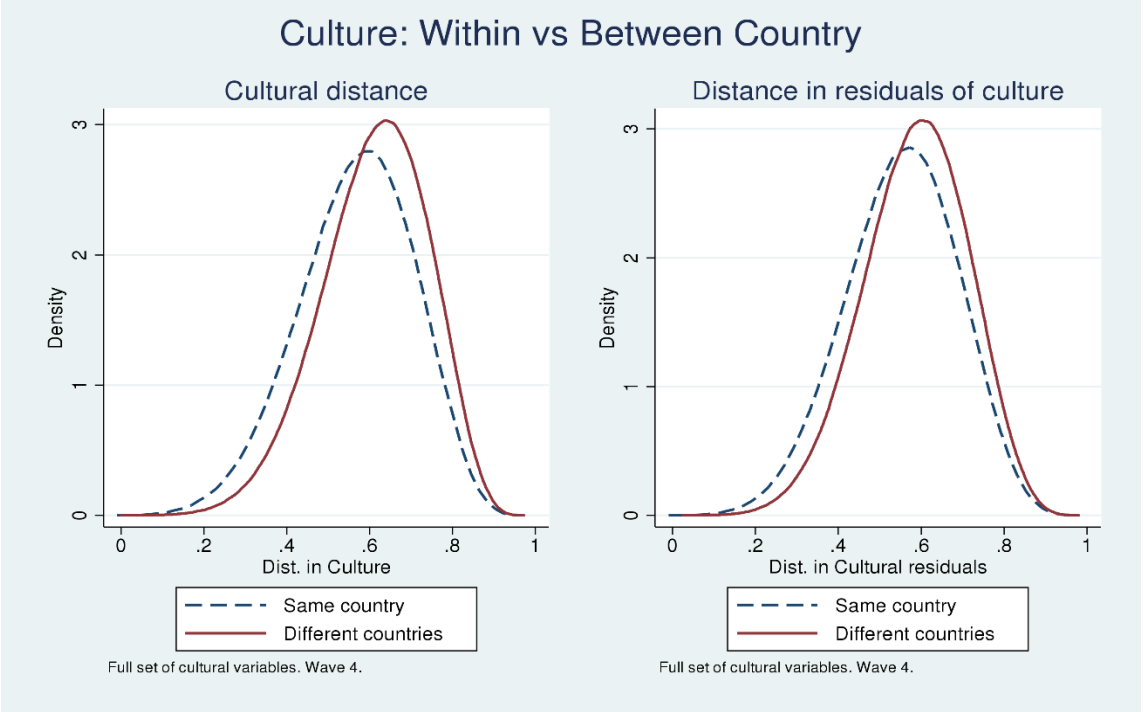


Figure 4.2

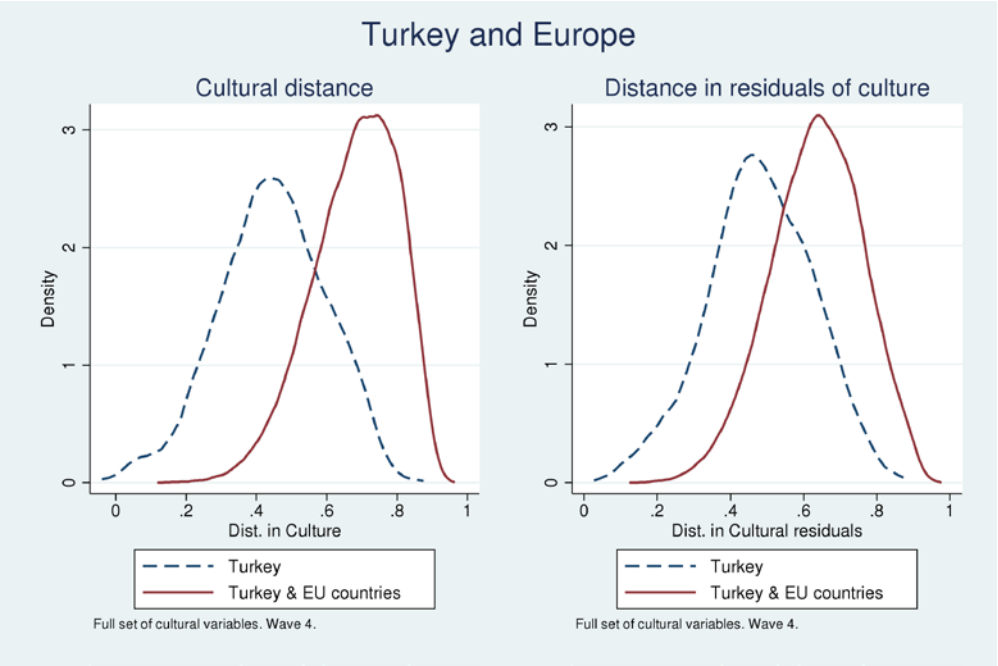


Figure 4.3

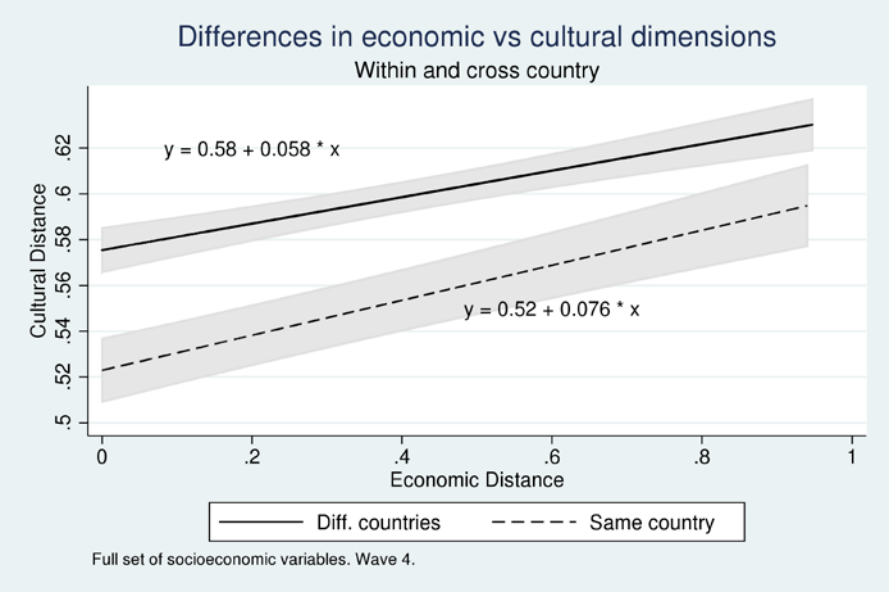


Figure 4.4

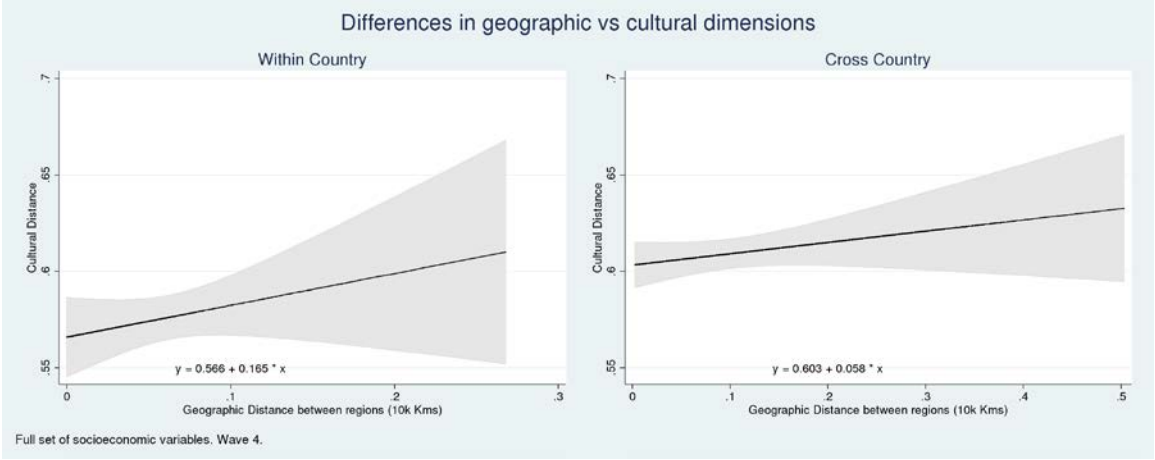
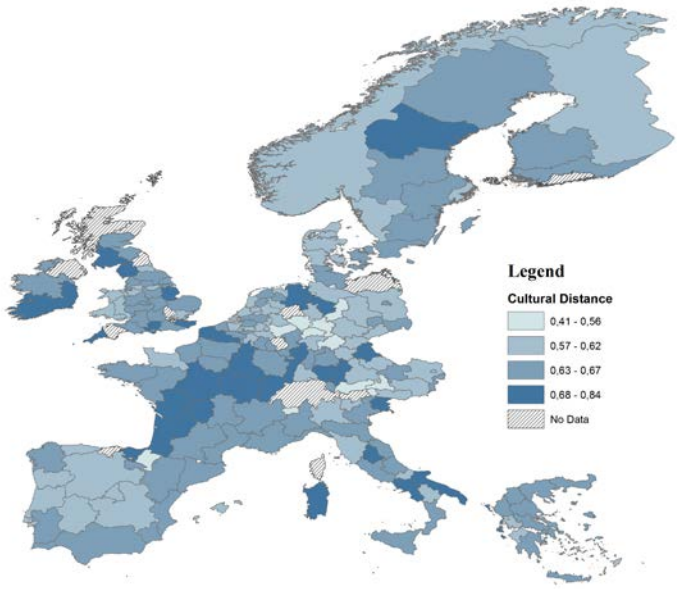
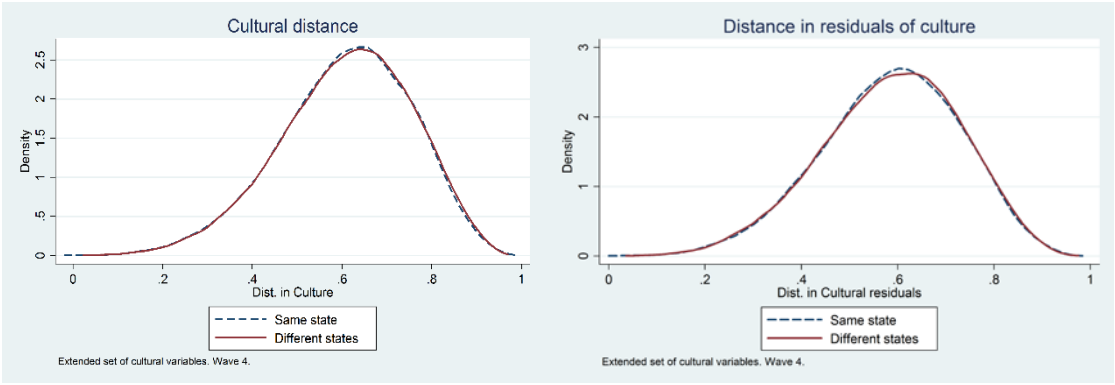


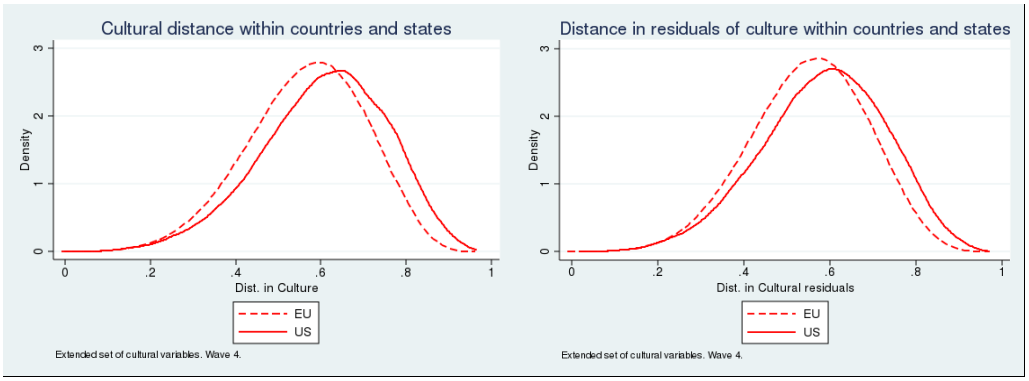
Figure 4.5

Cultural Distance from EU Centroid



Figures 5.1.a – 5.1.c





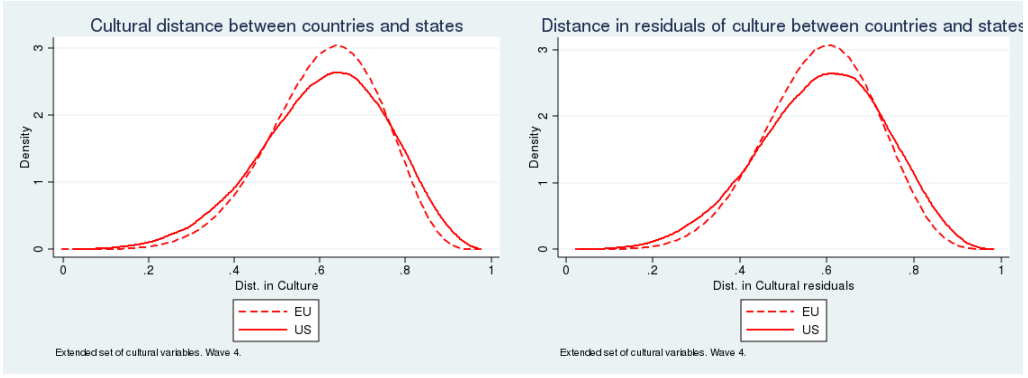


Table 4.1 - Avg. cultural distance between row & column individuals of identical socioeconomic level.

	AT	BE	DE	DK	ES	FI	FR	GB	GR	IE	IT	LU	NL	NO	PT	SE	All EU
AT	0.54																0.58
BE	0.59	0.57															0.59
DE	0.55	0.59	0.54														0.57
DK	0.60	0.60	0.60	0.47													0.56
ES	0.58	0.58	0.55	0.55	0.52												0.58
FI	0.57	0.59	0.57	0.55	0.55	0.53											0.56
FR	0.60	0.59	0.60	0.57	0.57	0.57	0.57										0.58
GB	0.59	0.60	0.59	0.57	0.61	0.59	0.59	0.56									0.59
GR	0.54	0.60	0.56	0.61	0.60	0.58	0.60	0.60	0.48								0.58
IE	0.60	0.62	0.60	0.61	0.63	0.58	0.61	0.60	0.58	0.60							0.61
IT	0.59	0.61	0.60	0.62	0.65	0.61	0.61	0.59	0.54	0.60	0.53						0.61
LU	0.61	0.61	0.62	0.61	0.61	0.60	0.60	0.60	0.61	0.62	0.61	0.61					0.61
NL	0.58	0.59	0.57	0.53	0.57	0.56	0.59	0.56	0.60	0.60	0.61	0.60	0.50				0.56
NO	0.58	0.57	0.56	0.54	0.53	0.53	0.55	0.58	0.59	0.60	0.62	0.60	0.55	0.51			0.55
PT	0.56	0.56	0.54	0.60	0.59	0.56	0.57	0.56	0.52	0.57	0.54	0.59	0.57	0.57	0.49		0.57
SE	0.61	0.61	0.59	0.52	0.55	0.56	0.57	0.59	0.65	0.63	0.66	0.62	0.56	0.54	0.60	0.52	0.57

Table 4.2 – Fear of EU and Cultural Distance

	(1)	(2)	(3)	(4)
	Fear of EU			
Cultural Distance	0.0992**	0.0844**	0.0794**	0.0711**
	(0.039)	(0.036)	(0.035)	(0.034)
Controls		X	X	X
Fixed Effects			Country	Region
Observations	6,810	6,810	6,810	6,810
R-squared	0.002	0.096	0.156	0.209

Note: standard errors clustered at the region level

ONLINE APPENDIX

Appendix A

Figure A.1

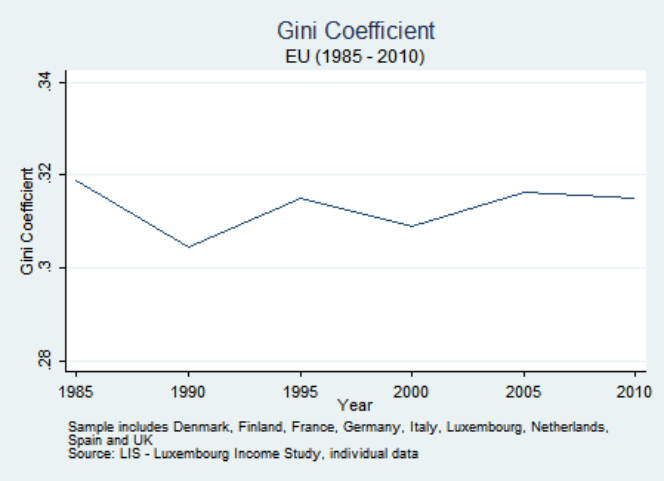


Figure A.2

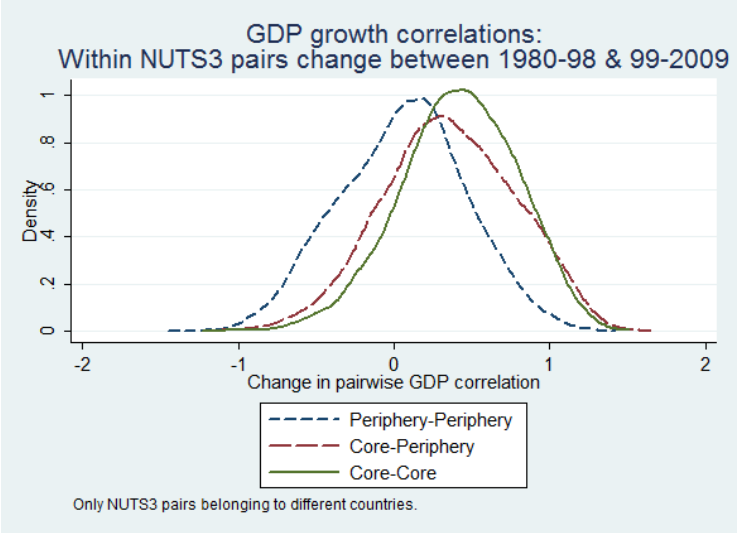
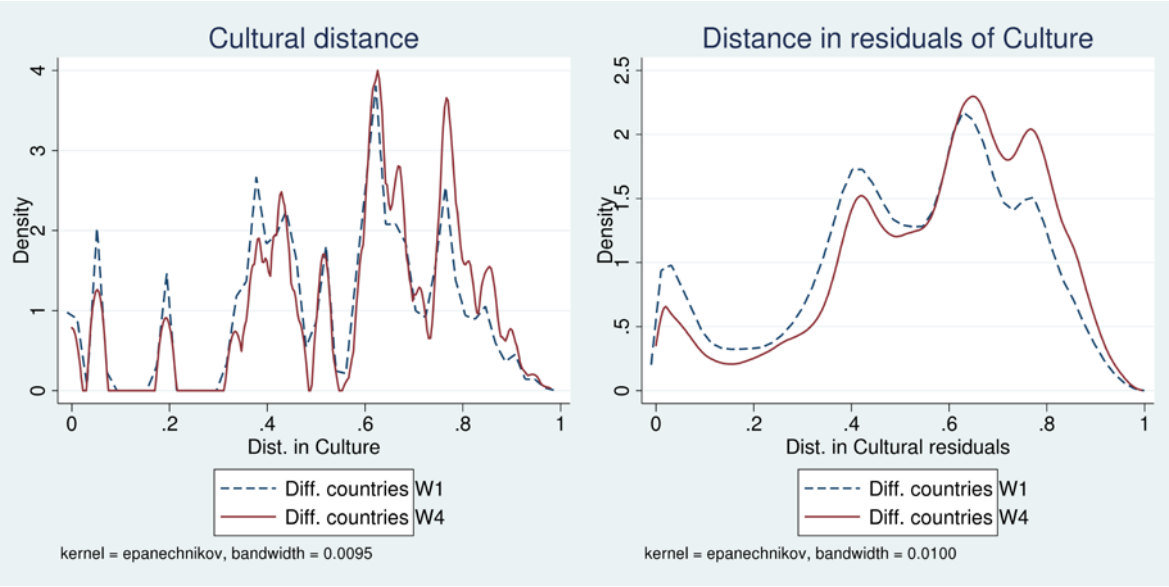
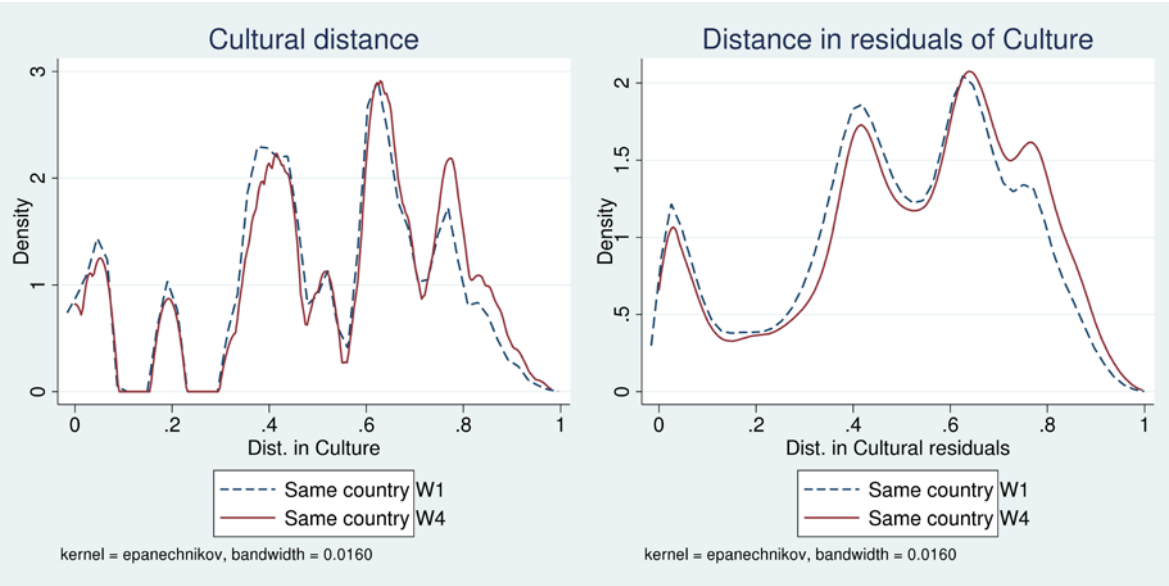
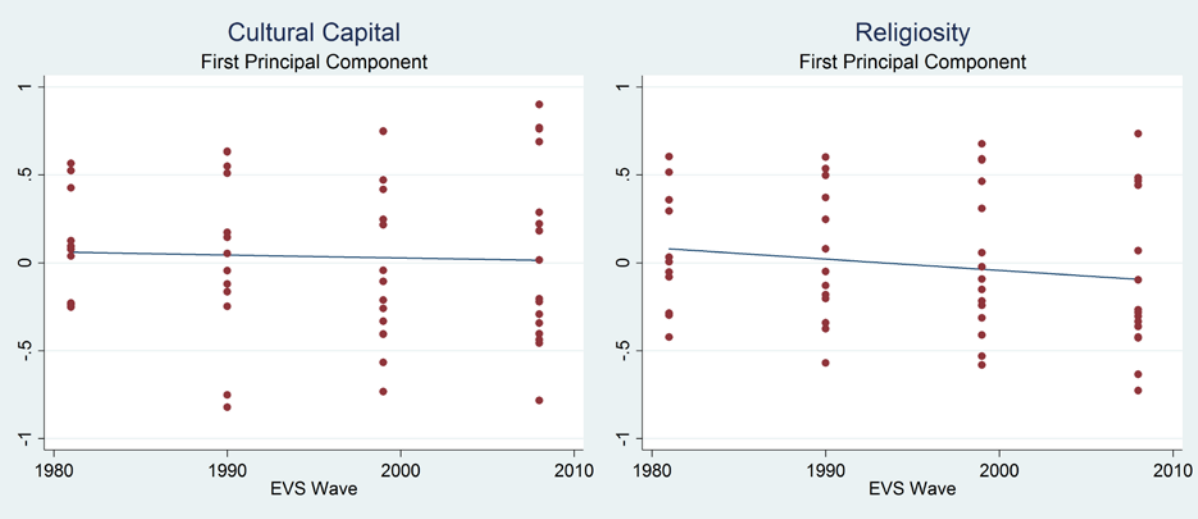


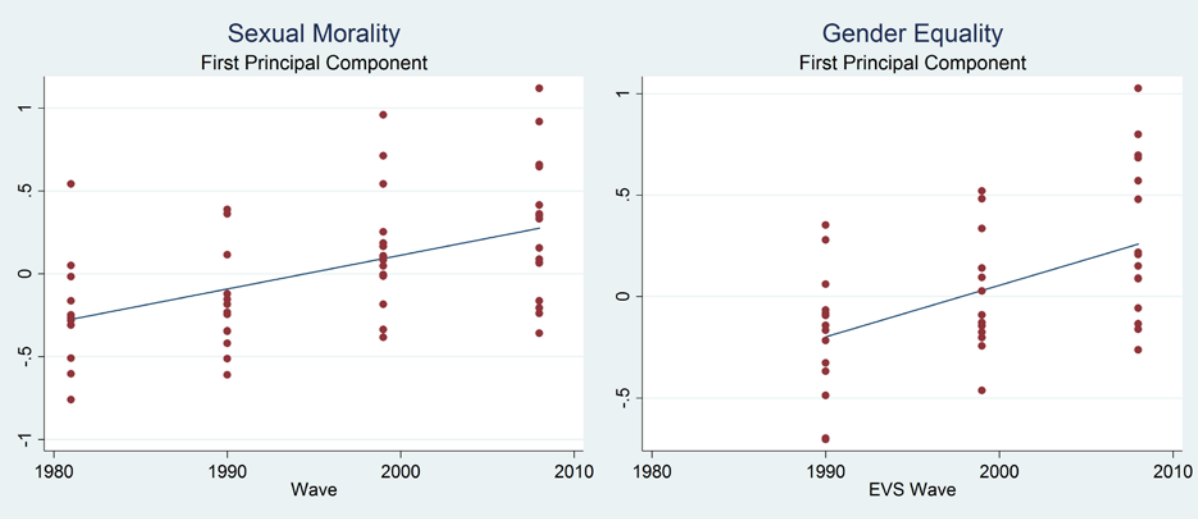
Figure A.3


Cultural distance
Density
Dist. in Culture
Diff. countries W1
Diff. countries W4
kernel = epanechnikov, bandwidth = 0.0095
Distance in residuals of Culture
Density
Dist. in Cultural residuals
Diff. countries W1
Diff. countries W4
kernel = epanechnikov, bandwidth = 0.0100


Cultural distance
Density
Dist. in Culture
Same country W1
Same country W4
kernel = epanechnikov, bandwidth = 0.0160
Distance in residuals of Culture
Density
Dist. in Cultural residuals
Same country W1
Same country W4
kernel = epanechnikov, bandwidth = 0.0160

Figures A.4.a – A.4.e





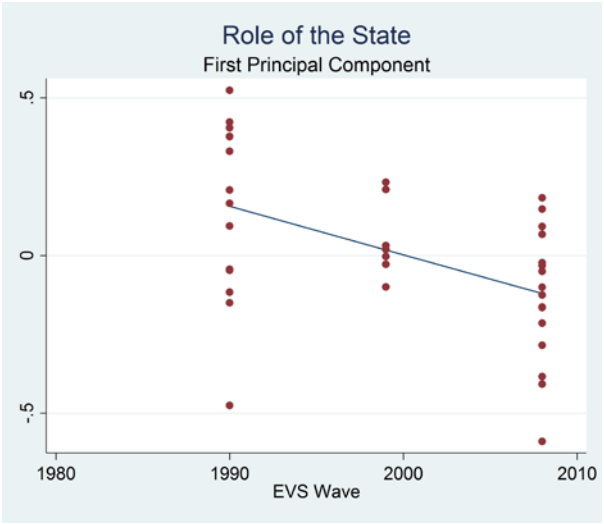
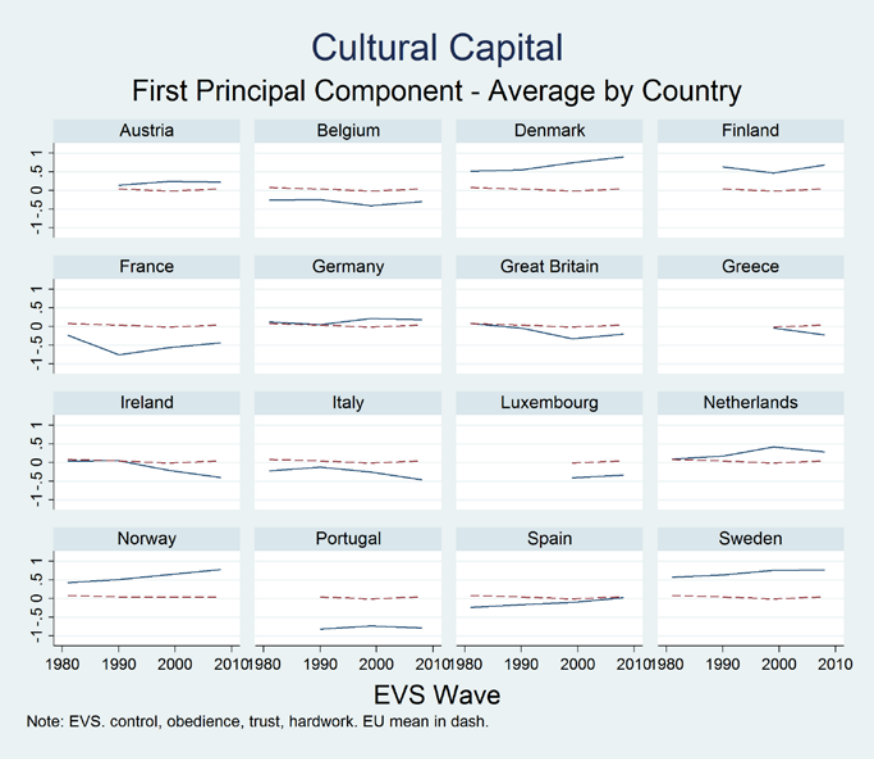
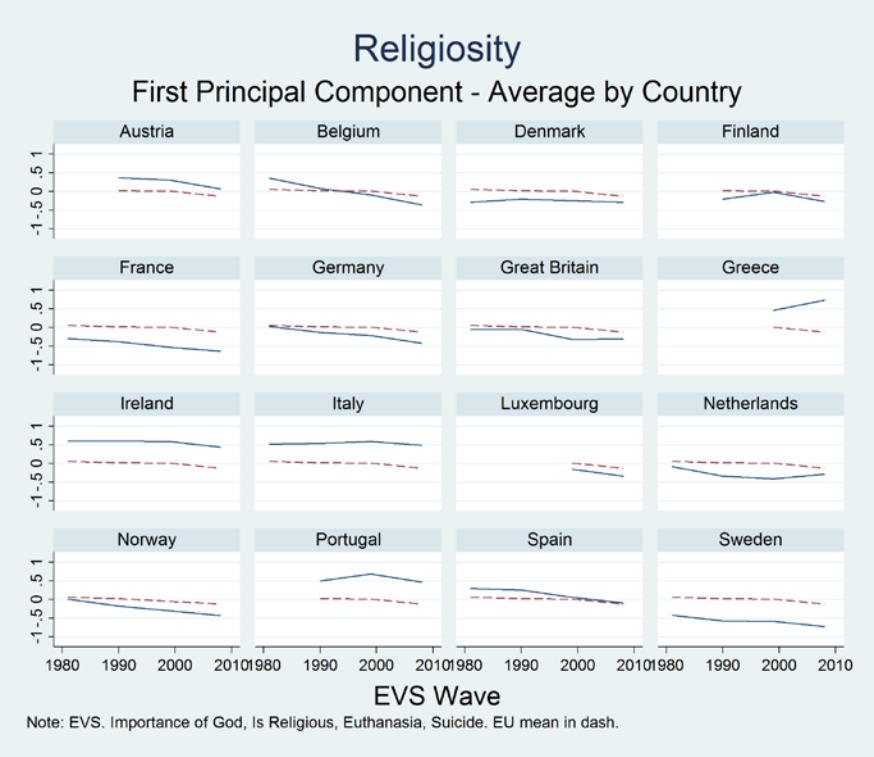


Figure A.5



Note: EVS. control, obedience, trust, hardwork. EU mean in dash.

Figure A.6



Note: EVS. Importance of God, Is Religious, Euthanasia, Suicide. EU mean in dash.

Figure A.7

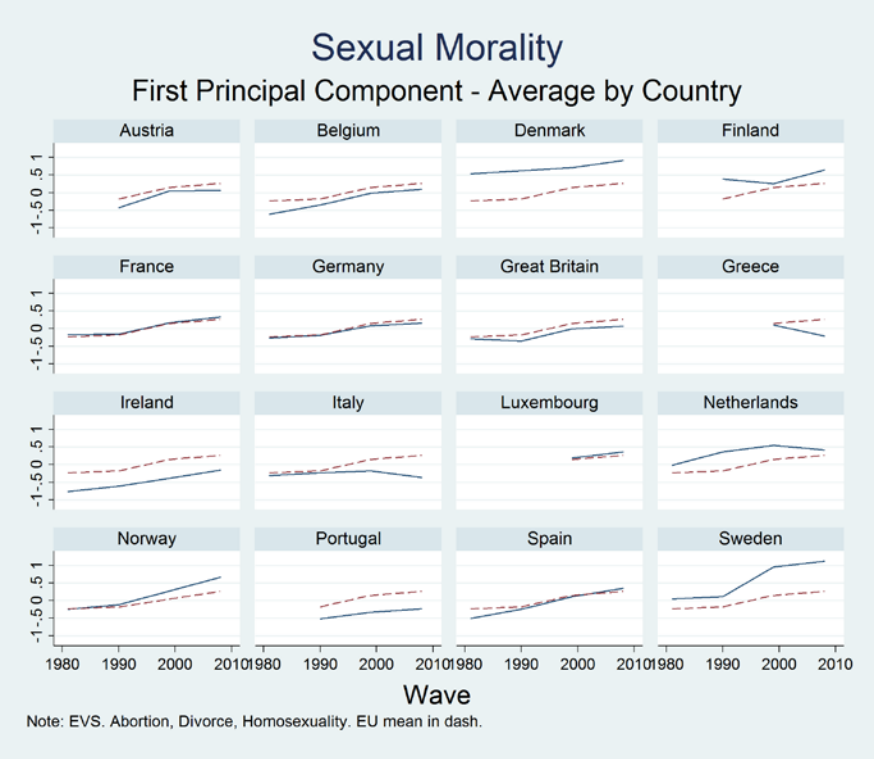


Figure A.8

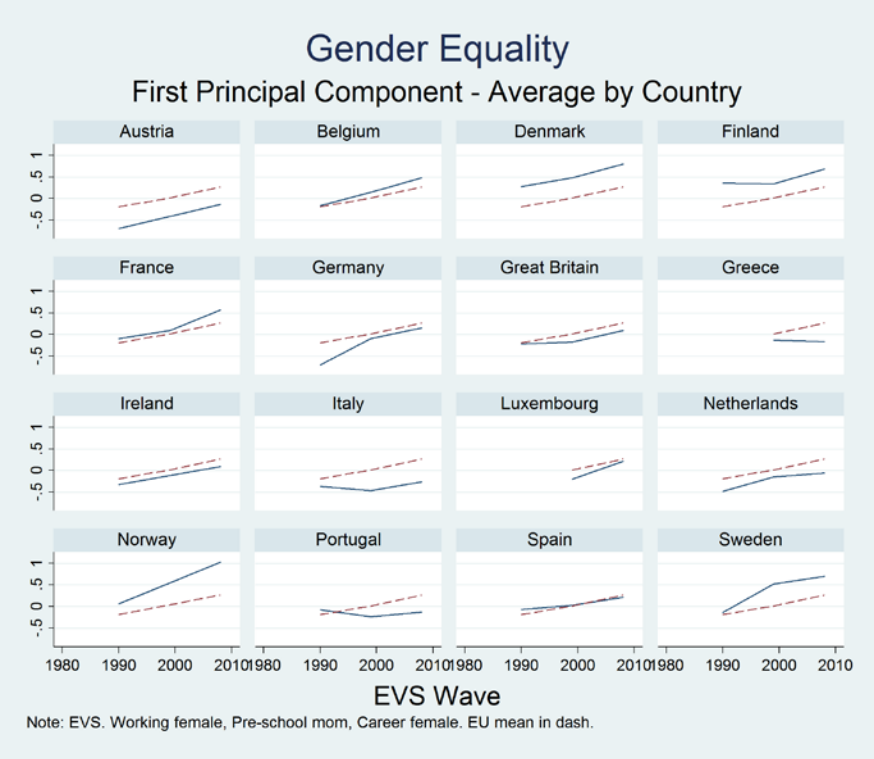


Figure A.9

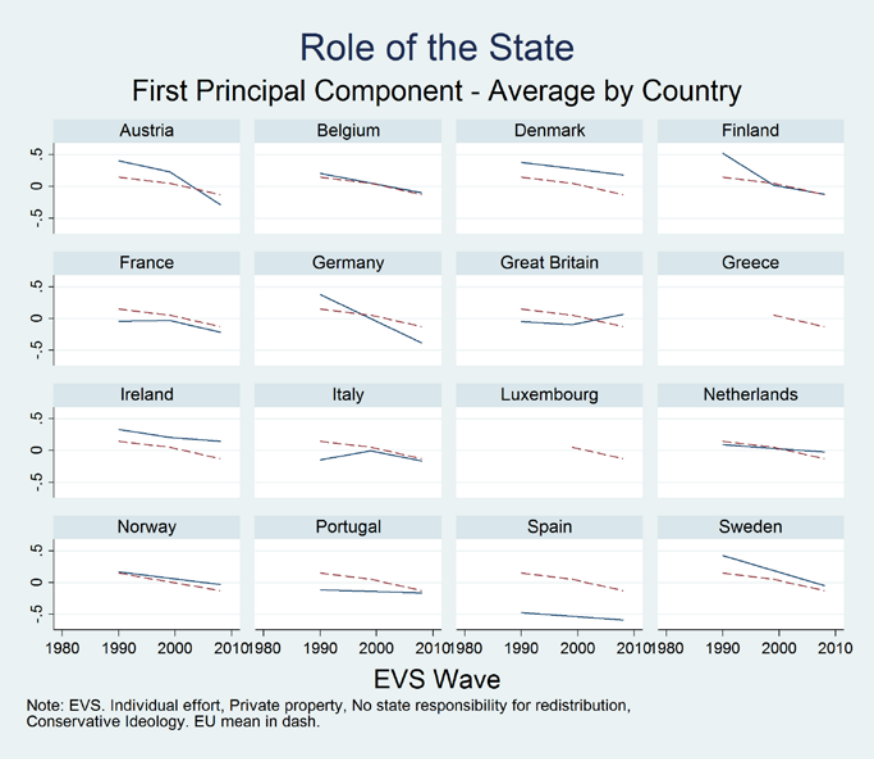


Figure A.10

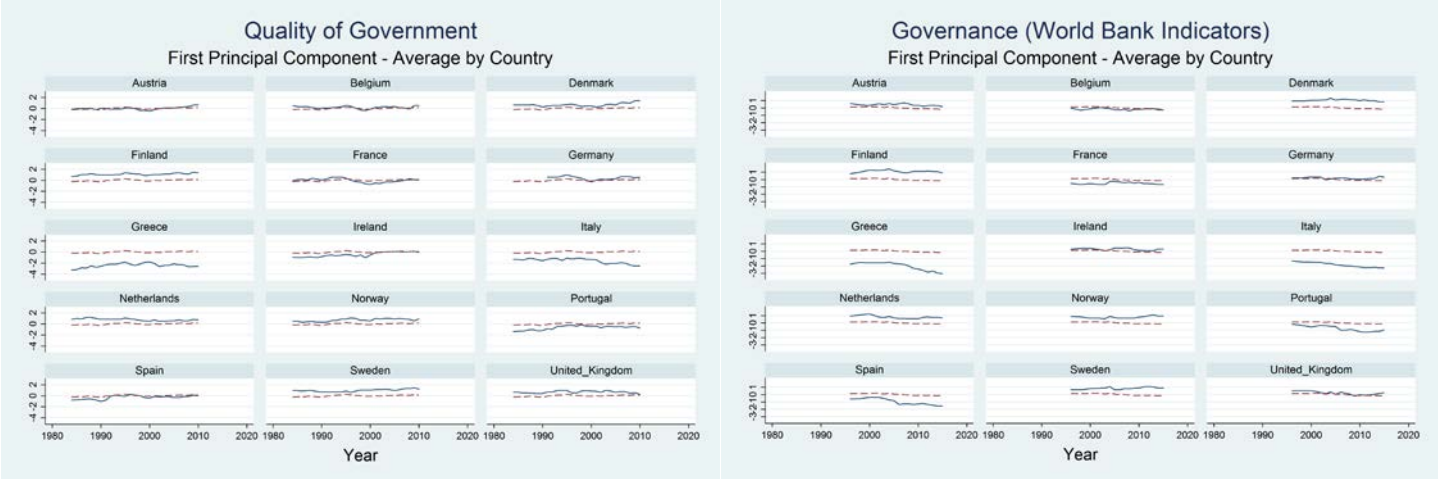


Figure A.11

Figure A.12

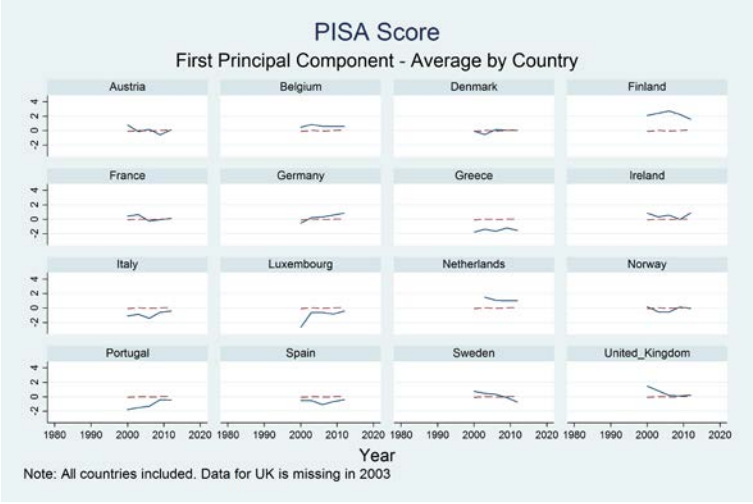


Figure A.13

Figures A.14

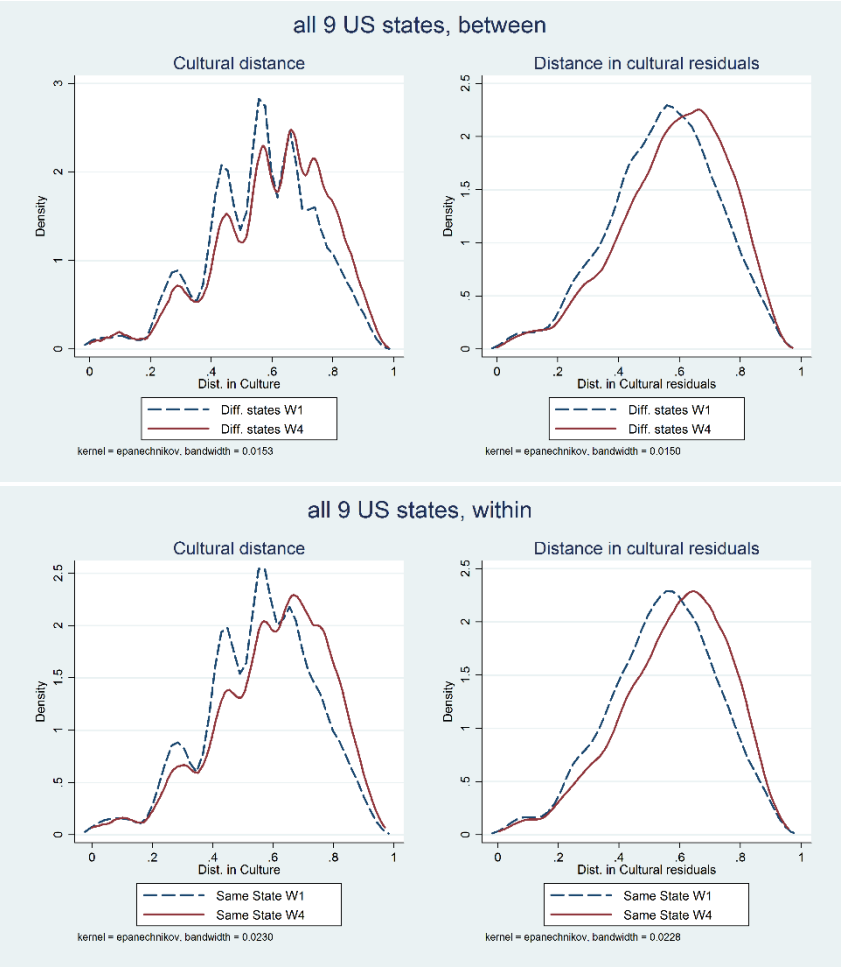


Figure A.15

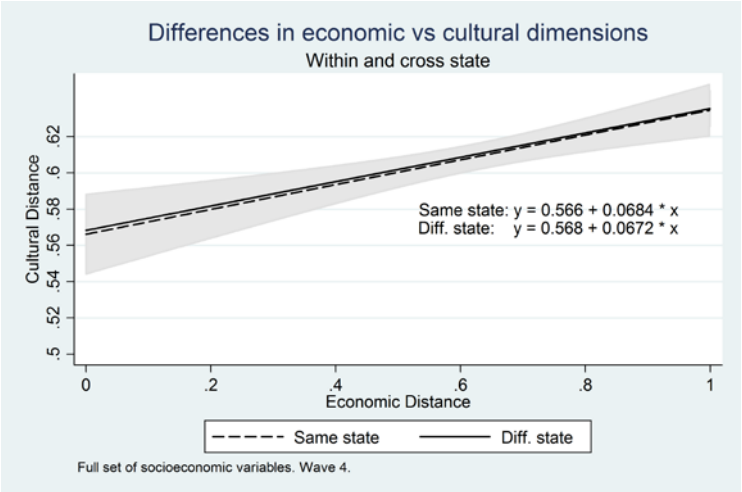


Figure A.16

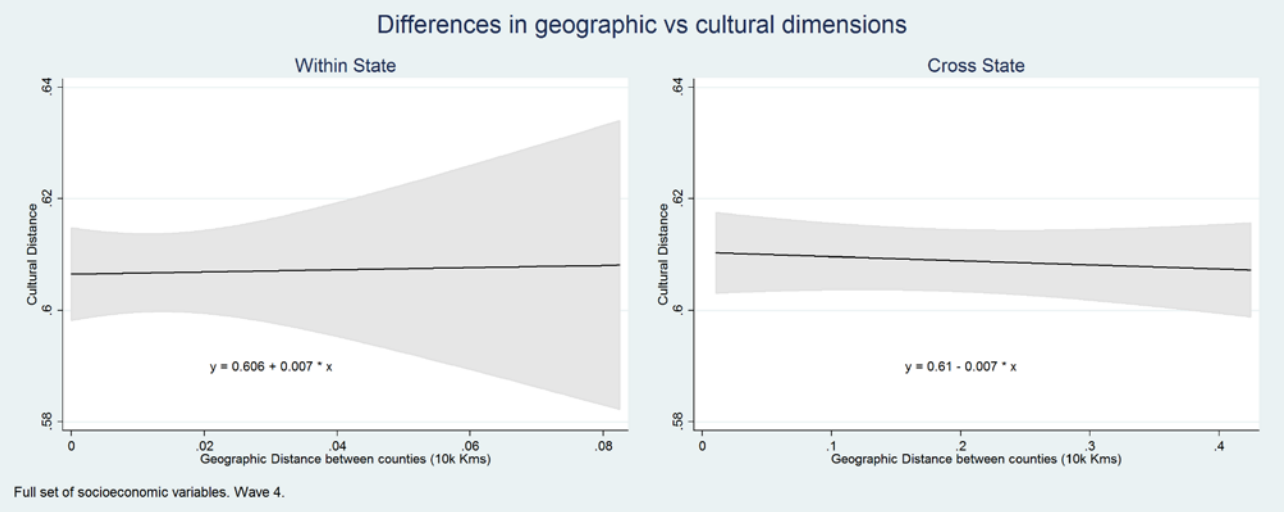


Table A.1 – Description of variables used in Section I

Variable	Description	Original Source	Period
GDP per capita	Log of Expenditure–side real GDP at chained PPP (in 2011 USD)	Feenstra, Inklaar and Timmer (2015)	1980 – 2009
Disposable Income	Total monetary and non–monetary current income net of income taxes and social security contributions, at PPP (in 2010 USD)	Luxembourg Income Study (LIS) Database	1985 – 2010
Regional GDP	Gross Domestic Product (€2005bn) NUTS3 disaggregation	Cambridge Econometrics	1980 – 2012

Table A.2 – Description of variables used in Section II

Question	Scale
A. Religiosity	
And how important is God in your life? Please use this card to indicate - 10 means very important and 1 means not at all important.	(0) Not important - (4) Very Important (a)
Independently of whether you go to church or not, would you say you are ...	Dummy for being religious (a)
Do you justify: euthanasia (terminating the life of the incurably sick)	Dummy for justifying euthanasia (a)
Do you justifiy: suicide	Dummy for justifying suicide (a)
B. Sexual Morality	
Do you justifiy: abortion	Dummy for justifying abortion (a)
Do you justify: divorce	(0) Always - (2) Absolutely not (a)
Do you justifiy: homosexuality	(0) Absolutely not - (3) always (a)
C. Gender Equality	
* A working mother can establish just as warm and secure a relationship with her children as a mother who does not work	(1) Agree strongly - (4) Disagree strongly
* A preschool child is likely to suffer if his or her mother works.	(1) Agree strongly - (4) Disagree strongly
* Both the husband and wife should contribute to household income	(1) Disgree strongly - (4) Agree strongly (a)
D. Role of the State	
* Now I'd like you to tell me your views on various issues. How would you place your views on this scale? [incomes should be made more equal]	(0) Income should be made more equal - (6) We need larger income differences as incentives (a)
* Now I'd like you to tell me your views on various issues. How would you place your views on this scale? [Private ownership of business should be increased]	(0) government ownership of business should be increased - (4) Private ownership of business should be increased (a)
* Now I'd like you to tell me your views on various issues. How would you place your views on this scale? [people should take more responsibility for providing for themselves]	(0) the government should take more responsibility to ensure that everyone is provided for - (4) people should take more responsibility for providing for themselves (a)
In political matters, people talk of 'the left' and 'the right'. How would you place your views on this scale generally speaking?	(0) Left - (6) right (a)
E. Cultural Capital	
Here is a list of qualities which children can be encouraged to learn at home. Which, if any, do you consider to be especially important? Please choose up to five: obedience	Dummy equal to one if considered important
Some people feel they have completely free choice and control over their lives, and other people feel that what they do has no real effect on what happens to them. Please use the scale to indicate how much freedom of choice and control you feel you have over the way your life turns out?	(0) Great Control - (2) None at all (a)
Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?	(1) Most people can be trusted - (2) Cannot be too careful (a)
Here is a list of qualities which children can be encouraged to learn at home. Which, if any, do you consider to be especially important? Please choose up to five: hard work	Dummy equal to one if considered important
Here is a list of qualities which children can be encouraged to learn at home. Which, if any, do you consider to be especially important? Please choose up to five: unselfishness	Dummy equal to one if considered important

Note: (a) variable rescaled from the original to ensure comparability with the General Value Survey

Table A.3 – Controls in the EVS and GSS

Variable	Description
Age	Respondent age (years)
Gender	Dummy equal one for male
Marital status	Dummies for being: (1) married, (2) divorced, (3) separated, (4) widowed, (5) single
Employment status	Dummies for being employed: (1) full time or self–employed, (2) part time, (3) retired/pensioned, (4) housewife (not otherwise employed), (5) student, (6) unemployed, (7) other. (a)
Education	Dummies for: (1) incomplete elementary education, (2) completed elementary education, (3) incomplete secondary school (any type), (4) completed secondary school (any type), (5) Some university (w/o degree), (6) University with degree, upper level tertiary (a)
Family income	Dummy for: (1) low income, (2) medium income, (3) high income (a)

Note: (a) recoded to match EVS

Table A.4 - Avg. change between wave 4 and wave 1 in cultural distance between each country citizen & EU citizens from other countries

	Between Countries		Within Country	
	Unconditional	Conditional	Unconditional	Conditional
BE	0.06***	0.06***	0.10***	0.09***
	(0.00028)	(0.00027)	(0.0012)	(0.0012)
DE	0.04***	0.04***	-0.01***	-0.004***
	(0.00028)	(0.00028)	(0.0013)	(0.0013)
DK	0.00***	0.02***	-0.06***	-0.04***
	(0.00028)	(0.00027)	(0.0013)	(0.0012)
ES	0.05***	0.05***	0.04***	0.03***
	(0.00028)	(0.00027)	(0.0013)	(0.0012)
FR	0.06***	0.06***	0.06***	0.05***
	(0.00027)	(0.00027)	(0.0012)	(0.0012)
IE	0.07***	0.07***	0.09***	0.08***
	(0.00036)	(0.00034)	(0.002)	(0.002)
IT	0.08***	0.08***	0.08***	0.08***
	(0.00029)	(0.00028)	(0.0014)	(0.0013)
NL	0.03***	0.03***	0.02***	0.02***
	(0.00029)	(0.00028)	(0.0013)	(0.0013)
NO	0.04***	0.04***	0.03***	0.03***
	(0.00028)	(0.00028)	(0.0013)	(0.0013)
SE	0.06***	0.05***	0.04***	0.05***
	(0.00028)	(0.00027)	(0.0013)	(0.0013)
GB	0.05***	0.05***	0.05***	0.05***
	(0.00027)	(0.00026)	(0.0012)	(0.0012)
Overall Mean	0.05***	0.05***	0.04***	0.04***
	(0.00012)	(0.00012)	(0.0004)	(0.00039)
Mean distance (wave 1)	0.57	0.55	0.54	0.52

Table A.5 – Correlation between factors of Section II and their components

	Religiosity
Importance of God	0.83
Religious	0.79
Euthanasia	–0.56
Suicide	–0.6
	Sexual Morality
Abortion	0.79
Divorce	0.85
Homosexuality	0.79
	Gender Equality
Working Mother	0.84
Preschool Mother	0.77
Career Female	0.46
	Role of the State (a)
Income equalization	–0.53
Private ownership	0.72
Individual Responsibility	0.63
Ideology (right)	0.64
	Cultural Capital
Control over life	–0.54
Obedience	0.46
Trust	–0.71
Hardwork	0.51

Note: (a) Higher values of the factors are associated with a weaker role of the State

Table A.6 – Description of variables used in Section III

Description	Original Source	Period
A. Quality of Government and of public administration		
Transparency Index	Williams (2015)	1984 - 2010
ICRG Indicator of Quality of Government	Howell (2011)	1984 - 2010
Political corruption	Coppedge et al. (2015)	1984 - 2010
B. Governance Indicator		
Corruption Government Effectiveness Political Stability Rule of Law Political Accountability	World Bank - Worldwide Governance Indicators	1996 - 2015
C. Quality of Legal Institutions		
Legal Institutional Quality	Kuncic (2014)	1990 - 2010
D. Education		
Pisa Scores (math, reading, science)	OECD/UNESCO (2003), OECD (2004, 2007, 2010, 2014)	2000 - 2012
E. Regulatory Environment		
Product Market Regulation	Koske, Wanner, Bitetti and Barbiero (2015)	1998 - 2013

Table A.7 - Questions used in the GSS

Question	Scale
A. Religiosity	
What is your religious preference? Is it Protestant, Catholic, Jewish, some other religion, or no religion?	Dummy for being religious (a)
When a person has a disease that cannot be cured, do you think doctors should be allowed by law to end the patient's life by some painless means if the patient and his family request it?	Dummy for justifying euthanasia (a)
Do you think a person has the right to end his or her own life if this person . . .Has an incurable disease? Has gone bankrupt? Has dishonored his or her family? Is tired of living and ready to die?	Dummy for justifying suicide (a)
B. Sexual Morality	
Should divorce in this country be easier or more difficult to obtain than it is now?	(0) more difficult- (2) easier (a)
C. Gender Equality	
* A working mother can establish just as warm and secure a relationship with her children as a mother who does not work	(1) Disagree strongly-(4) Agree strongly
* A preschool child is likely to suffer if his or her mother works.	(1) Agree strongly - (4) Disagree strongly
* It is much better for everyone involved if the man is the achiever outside the home and the woman takes care of the home and family.	(1) Disgree strongly - (4) Agree strongly
D. Role of the State	
* Some people think that the government in Washington ought to reduce the income differences between the rich and the poor, perhaps by raising the taxes of wealthy families or by giving income assistance to the poor. Others think that the government should not concern itself with reducing this income difference between the rich and the poor.	(0) government should not - (6) government should do (a)
* Some people think that the government in Washington is trying to do too many things that should be left to individuals and private businesses. Others disagree and think that the government should do even more to solve our country's problems. Still others have opinions somewhere in between.	(0) government should do more - (4) government does too much (a)
* Some people think that the government in Washington should do everything possible to improve the standard of living of all poor Americans; they are at Point 1 on this card. Other people think it is not the government's responsibility, and that each person should take care of himself; they are at Point 5.	(0) the government - (4) the people (a)
We hear a lot of talk these days about liberals and conservatives. I'm going to show you a seven-point scale on which the political views that people might hold are arranged from extremely liberal--point 1--to extremely conservative-- point 7. Where would you place yourself on this scale?	(0) Left - (6) right (a)
E. Cultural Capital	
If you had to choose, which thing on this list would you pick as the most important for a child to learn to prepare him or her for life? [obedience]	Dummy equal to one if considered important (a)
Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?	(1) Most people can be trusted - (0) Cannot be too careful (a)
If you had to choose, which thing on this list would you pick as the most important for a child to learn to prepare him or her for life? [hard work]	Dummy equal to one if considered important (a)
If you had to choose, which thing on this list would you pick as the most important for a child to learn to prepare him or her for life? [helping others]	Dummy equal to one if considered important (a)

Note: (a) variable rescaled from the original to ensure comparability with the European Value Survey

Table A.8 – Avg. change between wave 4 and wave 1 in cultural distance between each states citizen & US citizens from other states. Unconditional and conditional on socio–economic covariates.

	Between states		Within state	
	Unconditional	Conditional	Unconditional	Conditional
California	0.06***	0.08***	0.08***	0.10***
	(0.002)	(0.004)	(0.006)	(0.016)
Texas	0.06***	0.04***	0.08***	0.04**
	(0.001)	(0.004)	(0.006)	(0.017)
Illinois	0.06***	0.10***	0.07***	0.14***
	(0.002)	(0.005)	(0.006)	(0.018)
Michigan	0.06***	0.07***	0.07***	0.07***
	(0.002)	(0.005)	(0.007)	(0.022)
Florida	0.04***	0.03***	0.03***	0.004
	(0.002)	(0.005)	(0.006)	(0.019)
Ohio	0.03***	0.04***	0.00936	0.028533
	(0.002)	(0.005)	(0.006)	(0.019)
North_Carolina	0.03***	0.05***	0.007608	0.06***
	(0.002)	(0.005)	(0.006)	(0.019)
Pennsylvania	0.03***	0.005528	0.02***	0.001321
	(0.002)	(0.005)	(0.006)	(0.020)
New_York	0.05***	-0.01***	0.05***	-0.06***
	(0.002)	(0.005)	(0.006)	(0.019)
All 9 States W1–W4	0.05***	0.05***	0.05***	0.05***
	(0.001)	(0.002)	(0.002)	(0.006)
All 9 States W1	0.56	0.52	0.55	0.51

Table A.9 – Avg. cultural distance between row & column individuals of identical socioeconomic level.

	California	Texas	Illinois	Michigan	Florida	Ohio	North Carolina	Pennsylvania	New York	All States
California	0.52									0.55
Texas	0.55	0.57								0.57
Illinois	0.61	0.62	0.63							0.60
Michigan	0.59	0.60	0.63							0.59
Florida	0.53	0.54	0.59	0.57						0.55
Ohio	0.53	0.56	0.61	0.57	0.56					0.56
North Carolina	0.56	0.58	0.60	0.60	0.58	0.59				0.58
Pennsylvania	0.55	0.57	0.61	0.59	0.56	0.56	0.59	0.60		0.57
New_York	0.51	0.56	0.58	0.57	0.52	0.52	0.56	0.55	0.54	0.54

Table A.10 – Country Pride

Country	Wave 1	Wave 2	Wave 3	Wave 4
AT	-	0.53	0.54	0.48
BE	0.29	0.31	0.24	0.29
DE	0.21	0.23	0.22	0.20
DK	0.30	0.42	0.48	0.49
ES	0.51	0.46	0.44	0.57
FI	-	0.38	0.55	0.56
FR	0.31	0.35	0.40	0.37
GB	0.52	0.53	0.49	0.54
GR	-	-	0.55	0.67
IE	0.68	0.77	0.74	0.77
IT	0.40	0.40	0.39	0.46
LU	-	-	0.48	0.52
NL	0.18	0.23	0.20	0.28
NO	0.43	0.45	-	0.60
PT	-	0.42	0.78	0.65
SE	0.30	0.41	0.41	0.45
Mean	**0.37**	**0.42**	**0.46**	**0.49**

Appendix B. Recoding of cultural variables and controls in EVS and GSS for Sections II, IV, V.

EVS QUESTION	Answer–WORD	ANSWER–CODE	**NEW ANSWER**
Independently of whether you go to church or not, would you say you are ...	**Religious**	1	**1**
	Not religious	2	**0**
	Convinced atheist	3	
Do you justify: divorce	**absolutely not**	1	**0**
	.	2	
	.	3	
	.	4	**1**
	.	5	
	.	6	
	.	7	
	.	8	**2**
	.	9	
	always	10	
Do you justify: Euthanasia (terminating the life of the incurably sick)	**absolutely not**	1	**0**
	.	2	
	.	3	
	.	4	
	.	5	
	.	6	
	.	7	
	.	8	**1**
	.	9	
	always	10	
Do you justify: Suicide	**absolutely not**	1	**0**
	.	2	
	.	3	**1**
	.	4	
	.	5	**2**
	.	6	
	.	7	**3**
	.	8	
	.	9	**4**
	always	10	
Here is a list of qualities which children can be encouraged to learn at home. Which, if any, do you consider to be especially important? Please choose up to five: **unselfishness**	**important**	1	**1**
	not mentioned	0	**0**

EVS QUESTION	Answer–WORD	ANSWER–CODE	**NEW ANSWER**
Here is a list of qualities which children can be encouraged to learn at home. Which, if any, do you consider to be especially important? Please choose up to five: **hard work**	**important**	1	**1**
	not mentioned	0	**0**
Here is a list of qualities which children can be encouraged to learn at home. Which, if any, do you consider to be especially important? Please choose up to five: **obedience**	**important**	1	**1**
	not mentioned	0	**0**
Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?	**most people**	1	**1**
	cannot be too careful	2	**0**
In political matters, people talk of 'the left' and 'the right'. How would you place your views on this scale generally speaking?	**left**	1	**0**
	.	2	**1**
	.	3	**2**
	.	4	
	.	5	**3**
	.	6	**4**
	.	7	
	.	8	**5**
	.	9	**6**
	right	10	
Now I'd like you to tell me your views on various issues. How would you place your views on this scale?	**incomes more equal**	1	**6**
	.	2	**5**
	.	3	**4**
	.	4	
	.	5	**3**
	.	6	**2**
	.	7	
	.	8	**1**
	.	9	**0**
	incentives to individual	10	
Now I'd like you to tell me your views on various issues. How would you place your views on this scale?	**private**	1	**4**
	.	2	
	.	3	**3**
	.	4	
	.	5	**2**
	.	6	
	.	7	**1**
	.	8	
	.	9	**0**
	government	10	

EVS QUESTION	Answer–WORD	ANSWER–CODE	**NEW ANSWER**
Now I'd like you to tell me your views on various issues. How would you place your views on this scale?	**provide themselves**	1	**4**
	.	2	
	.	3	**3**
	.	4	
	.	5	**2**
	.	6	
	.	7	**1**
	.	8	
	.	9	**0**
	govt should	10	
A working mother can establish just as warm and secure a relationship with her children as a mother who does not work	**Agree strongly**	1	**4**
	.	2	**3**
	.	3	**2**
	Disagree strongly	4	**1**
Both the husband and wife should contribute to household income	**Agree strongly**	1	**4**
	.	2	**3**
	.	3	**2**
	Disagree strongly	4	**1**
A preschool child is likely to suffer if his or her mother works.	from 1=agree strongly to 4=disagree strongly		**unchanged**
And how important is God in your life? Please use this card to indicate – 10 means very important and 1 means not at all important.	**absolutely not**	1	**0**
		2	
		3	**1**
		4	
		5	**2**
		6	
		7	**3**
		8	
		9	**4**
	always	10	
Do you justify: abortion	**absolutely not**	1	**0**
		2	
		3	
		4	
		5	
		6	
		7	
		8	**1**
		9	
	always	10	

EVS QUESTION	Answer–WORD	ANSWER–CODE	**NEW ANSWER**
Do you justify: homosexuality	**absolutely not**	1	**0**
	.	2	
	.	3	**1**
	.	4	
	.	5	
	.	6	**2**
	.	7	
	.	8	
	.	9	**3**
	always	10	
Some people feel they have completely free choice and control over their lives, and other people feel that what they do has no real effect on what happens to them. Please use the scale to indicate how much freedom of choice and control you feel you have over the way your life turns out?	**none at all**	1	**0**
	.	2	
	.	3	
	.	4	
	.	5	**1**
	.	6	
	.	7	**2**
	.	8	
	.	9	
	a great deal	10	

GSS QUESTION	Answer–WORD	ANSWER–CODE	**NEW ANSWER**
Religion	**Protestant**	1	**1**
	Catholic	2	
	Jewish	3	
	Other	5	
	,,,	6	
	,,,	7	
	,,,	8	
	,,,	9	
	,,,	10	
	,,,	11	
	None	4	**0**
Should divorce in this country be easier or more difficult to obtain than it is now?	**Easier**	1	**2**
	stay as it is	3	**1**
	more difficult	2	**0**
When a person has a disease that cannot be cured, do you think doctors should be allowed by law to end the patient's life by some painless means if the patient and his family request it?	**No**	2	**0**
	Yes	1	**1**
Do you think a person has the right to end his or her own life if this person . . .Has an incurable disease? Has gone bankrupt? Has dishonored his or her family? Is tired of living and ready to die?	Yes	1	**1**
	No	2	**0**
	Yes	1	**1**
	No	2	**0**
	Yes	1	**1**
	No	2	**0**
	Yes	1	**1**
	No	2	**0**
If you had to choose, which thing on this list would you pick as the most important for a child to learn to prepare him or her for life?	position of "help others" in a ranking of 5 alternatives	1	**1**
		2	
		3	**0**
		4	
		5	
If you had to choose, which thing on this list would you pick as the most important for a child to learn to prepare him or her for life?	position of "hard work" in a ranking of 5 alternatives	1	**1**
		2	
		3	**0**
		4	
		5	
If you had to choose, which thing on this list would you pick as the most important for a child to learn to prepare him or her for life?	position of obedience in a ranking of 5 alternatives	1	**1**
		2	
		3	**0**
		4	
		5	
Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?	**most people**	1	**1**
	cannot be careful	2	**0**
	Depends	3	**.dk**

GSS QUESTION	Answer–WORD	ANSWER–CODE	**NEW ANSWER**
We hear a lot of talk these days about liberals and conservatives. I'm going to show you a seven–point scale on which the political views that people might hold are arranged from extremely liberal—point 1—to extremely conservative—point 7. Where would you place yourself on this scale?	**extremely liberal**	1	**0**
	.	2	**1**
	.	3	**2**
	.	4	**3**
	.	5	**4**
	.	6	**5**
	extremely conservative	7	**6**
Some people think that the government in Washington ought to reduce the income differences between the rich and the poor, perhaps by raising the taxes of wealthy families or by giving income assistance to the poor. Others think that the government should not concern itself with reducing this income difference between the rich and the poor.	**govt should reduce**	1	**6**
	.	2	**5**
	.	3	**4**
	.	4	**3**
	.	5	**2**
	.	6	**1**
	people themselves	7	**0**
Some people think that the government in Washington is trying to do too many things that should be left to individuals and private businesses. Others disagree and think that the government should do even more to solve our country's problems. Still others have opinions somewhere in between.	**govt do more**	1	**0**
	.	2	**1**
	agree with both	3	**2**
	.	4	**3**
	govt do too much	5	**4**
Some people think that the government in Washington should do everything possible to improve the standard of living of all poor Americans; they are at Point 1 on this card. Other people think it is not the government's responsibility, and that each person should take care of himself; they are at Point 5.	**govt should**	1	**0**
	.	2	**1**
	.	3	**2**
	.	4	**3**
	people themselves	5	**4**

GSS QUESTION	Answer–WORD	ANSWER–CODE	**NEW ANSWER**
A working mother can establish just as warm and secure a relationship with her children as a mother who does not work.	**strongly agree**	1	**4**
		2	**3**
		3	**2**
	strongly disagree	4	**1**
It is much better for everyone involved if the man is the achiever outside the home and the woman takes care of the home and family.	**Agree strongly**	1	**1**
	.	2	**2**
	.	3	**3**
	Disagree strongly	4	**4**
A preschool child is likely to suffer if his or her mother works.	from 1=strongly agree to 4=strongly disagree		**unchanged**

EVS CONTROL	Answer–WORD	ANSWER–CODE	**NEW ANSWER**
Sex	**male**	1	**1**
	female	0	**0**
Age			**unchanged**
What is your current legal marital status?	**married**	1	**1**
	divorced	3	**3**
	separated	4	**4**
	widowed	5	**5**
	single/never married	6	**6**
	living as married	2	
And what age did you (will you) complete your full–time education?	**<12 years**	1	**Recoded in "none, primary, lower secondary, upper secondary, university" according to country specific schooling rules.**
	13 years	2	
	14 years	3	
	15 years	4	
	16 years	5	
	17 years	6	
	18 years	7	
	19 years	8	
	20 years	9	
	>21 years	10	
What is the highest level you have reached in your education?	**Inadequately completed elementary education**	1	**1**
	Completed (compulsory) elementary education	2	**2**
	Incomplete secondary school: technical/vocational type	3	**3**
	Incomplete secondary: university–preparatory type/secondary,	5	
	Complete secondary school: technical/vocational type/secondary	4	**4**
	Complete secondary: university–preparatory type/full secondary	6	
	Some university without degree/higher education – lower–level tertiary	7	**5**
	University with degree/higher education – upper–level tertiary	8	**6**
Are you, yourself, employed now? If Yes: About how many hours a week?	**full time (30h a week or more)**	1	**1**
	self employed	3	
	part time (less then 30 hours a week)	2	**2**
	retired/pensioned	4	**4**
	housewife (not otherwise employed)	5	**5**
	student	6	**6**
	unemployed	7	**7**
	other	8	**8**
income (recoded)	**low**	1	**1**
	medium	2	**2**
	high	3	**3**
size of town	**<=2000**	1	**1**
	2000–5000	2	**2**
	5000–10000	3	**3**
	10000–20000	4	**4**
	20000–50000	5	**5**
	50000–100000	6	**6**
	100000–500000	7	**7**
	>=500000	8	**8**

GSS CONTROL	Answer–WORD	ANSWER–CODE	**NEW ANSWER**
sex	**male**	1	**1**
	female	0	**0**
age			**unchanged**
marital status	**Married**	1	**1**
	Divorced	3	**3**
	Separated	4	**4**
	Widowed	2	**5**
	Never Married	5	**6**
education	**no formal schooling**	0	
	1st grade	1	
	2nd grade	2	**1**
	3rd grade	3	
	4th grade	4	
	5th grade	5	**2**
	6th grade	6	
	7th grade	7	
	8th grade	8	**3**
	9th grade	9	
	10th grade	10	
	11th grade	11	
	12th grade	12	**4**
	1 year of college	13	
	2 years	14	**5**
	3 years	15	
	4 years	16	
	5 years	17	
	6 years	18	**6**
	7 years	19	
	8 years	20	
Last week were you working full time, part time, going to school, keeping house, or what?	**Full time**	1	**1***
	Part time	2	**2***
	With job, but not at work	3	
	Retired	5	**4**
	Keeping house	7	**5**
	In School	6	**6**
	Unemployed, laid off, looking for work	4	**7**
	Other	8	**8**
In which of these groups did your total family income, from all sources, fall last year before taxes, that is? Just tell me the letter.	**<1000**	1	
	1000–2999	2	
	3000–3999	3	
	4000–4999	4	
	5000–5999	5	**1**
	6000–6999	6	
	7000–7999	7	
	8000–9999	8	
	10000–14999	9	
	15000–19999	10	**2**
	20000–24999	11	
	>=25000	12	**3**
population of town in thousands		<=2	**1**
		2–5	**2**
		5–10	**3**
		10–20	**4**
		20–50	**5**
		50–100	**6**
		100–500	**7**
		>=500	**8**

*Full time and part time is determined by the two variables hrs1 hrs2. If either of the two is greater or equal than 30, the answer is coded as 1. If one of the two is lower than 30 or missing, the answer is 2