Social capital formation across space: proximity and trust in European regions[*]

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May 31, 2012

Abstract

An extensive economics and regional science literature has discussed the importance of social capital for economic growth and development. Yet, what social capital is and how it is formed are elusive issues, which require further investigation. Here, we refer to social capital in terms of civic" capital and "good culture", as rephrased by Guiso, Sapienza and Zingales (2010) and Tabellini (2010). The accumulation of this kind of capital allows the emerging of regional informal institutions, which may help explaining differences in regional development. In this paper, we take a regional perspective and use exploratory space and space-time methods to assess whether geography, via proximity, contributes to the formation of social capital across European regions. In particular, we ask whether generalized trust, a fundamental constituent of social capital and an ingredient of economic development, tends to be clustered across space and over time. From the policy standpoint, the spatial "hysteresis" of regional trust may contribute to the formation of "spatial traps" of social capital and act as a further barrier to regional economic development and convergence.

Keywords: Social Capital; Generalized Trust; European Social Survey; Spatial Dynamics; ESTDA

Jel Codes: R1, Z13, C31, F02

1 Introduction

A copious literature links social capital to economic development and growth. However, what social capital is and how it is formed are yet elusive issues, which require further interpretation. In a recent paper, building on the work of Banfield (1958), Putnam (1993) and Guiso, Sapienza and Zingales (2006, 2008, 2010), Tabellini (2010) considers social capital as the set of cultural traits of an individual, or a community, which can *"affect economic development both directly or indirectly through better institutions"*. Importantly, he also argues that over the course of history these cultural traits help shaping not only formal institutions at the national level, but also informal ones at the local or community level. In turn, this process may help explaining different economic outcomes even under the same formal institutions. Tabellini (2010) provides evidence of the role of these cultural traits for the economic development of Western European NUTS 1 regions.

Further important information may come from the sub-national disaggregated level. For example, an interesting and overlooked dimension is the regional diffusion of social capital. Indeed, the formation of cultural traits will depend on the interaction between individuals and, hence, transaction costs, which are typically inversely related to distance.[1]

This interpretation introduces a role for geography in mapping values and beliefs across communities as a function of proximity. This paper focuses on this role and, specifically, investigates the extent of spatial association of "generalized trust", one of the fundamental cultural traits identified by Tabellini (2010) for economic development. Generalized trust captures the trusting attitude of people towards the other members of society, rather than just family or friends, referred to as "personalized trust".[2] According to Guiso, Sapienza and Zingales (2004), this particular measure of social capital is critical for market functioning and financial development, since "financial contracts are the ultimate trust-intensive contracts". The authors find that the degree of financial development and the mix of instruments used are affected by generalized trust.[3]

Trust, maybe more than other cultural traits, rests on economic and social relations built over time and, hence, a positive (or negative) trusting attitude may be more strongly influenced by geographical proximity. Here, we first investigate the role of proximity in shaping generalized trust. Do communities tend to share beliefs and values with other geographically closer communities? To the extent that social capital, in general, and generalized trust in particular, are important determinants of long run growth, the clustering of regions

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[1] Two are the main perspectives on social capital as a relational concept. On one side, structuralists consider the role of networks (in terms of bonding, such as friendship, or bridging, such as the community), where social capital can be seen as the number of connections of an individual. On the other side, interactionists consider social capital along the lines of social solidarity and, hence, depending on a number of intangible features (norms, values, trust, beliefs, and shared identity).

[2] Generalized and personalized trust are often considered as rival. Fukuyama (1995), for example, finds that strong trust within the family is associated with low levels of trust towards people in general.

[3] For further information on the role and the definitions of social/civic capital, please refer to Guiso, Sapienza and Zingales (2010).

with high levels of trust and regions with low levels of trust may favor the formation of economic convergence clubs. The spatial stickiness of values and beliefs may imply that while "trust abundant" regions surrounded by similarly "trust abundant" regions will tend to strengthen their position, "poorly trusting" regions next to other "poorly trusting" regions may end up stuck in a "spatial social capital trap".

A second goal of the paper is to assess the spatial persistence of trust clusters. How easily do regions in high or low trust clusters change their trusting attitudes? How resilient are positive or negative clusters to the forces of time? Answering these questions is important in order to understand how easy it is for a region to resist in a high trusting cluster or, conversely, exit a negative spatial social capital trap and enter a positive path of development.

Finally, according to Tabellini these common values and beliefs shape communities before nations, hence creating regional informal institutions inside national formal institutions. A number of questions arise with respect to the relationship between the national and regional level of social capital. Are there intra-national (i.e. within national borders) differences in regional trusting attitudes? Are there international regional clusters (i.e. across national borders)? To what extent do national forces (such as those due to formal institutions) interfer with the regional cross-border spatial diffusion of values and beliefs? Answering these questions may shed light on the "power" of national institutions and policies, compared to regional institutions and policies. Strictly from a European perspective, this analysis may also yield interesting insights on the process of European integration.

This paper is a first attempt to answer these questions using both static and dynamic spatial exploratory data methods (ESDA and ESTDA) over a measure of "generalized trust" for NUTS 2 European regions. This approach allows assessing the distribution of trust across regions and changes in such distribution, conditional on the trusting attitude of neighbors. Such space-time analysis may help assessing the regional "spatial hysteresis" of generalized trust, and the extent of "social capital spatial traps".

The rest of the paper is organized as follows. Section 2 discusses generalized trust across European regions, section 3 briefly introduces the methodology and section 4 presents the results. The final section draws some conclusions from the analysis.

2   Generalized trust in European regions.

As pointed out by Durlauf (2002), measuring social capital is complicated by the ambiguity of the definition, by measurement errors and by a general lack of information. In his review of Fukuyama (1995), Solow (1995) highlights in particular how, in order to be properly considered as "capital" in economic models, social capital

needs a process of accumulation (investment) or decumulation (depreciation) and a measure of comparability across communities (countries/regions).[4]

In this direction, along the lines of Putnam (1993), Guiso, Sapienza and Zingales (GSZ, 2006, 2008, 2010) concentrate on the narrower concept of "civic capital", defined as *those persistent and shared beliefs and values that help a group overcome the free rider problem in the pursuit of socially valuable activities*". They explain the accumulation of social capital over time in an overlapping-generations model, where children are first taught by parents, update their beliefs through life-learning and, later in life, when themselves parents, transmit these updated beliefs to their children. Over time, this process determines the "civicness" of a community. In this paper, we abstract from the highly controversial debate on the definition of social capital and rely, instead, on this interpretation of social capital, less affected by measurement issues.

Measuring social capital often takes an outcome-based approach, where crime rates, teenage pregnancy rates, voter turnout, blood donation are used as proxies. However, this approach has been criticized by DiPasquale and Glaeser (1998) on the grounds that social capital is already present whenever one tries to measure it through the outcome based approach. Alternative approaches take the form of experiments and surveys. While the first are relatively costly and their results may not be easily extended outside the experiment (say, at the national or regional level), the survey based approach has found extensive applications, especially in economics (see, for example, Alesina and La Ferrara, 2002). Hence, we rely on survey data to measure civic capital à-la-GSZ and Tabellini. The most comprehensive and widely used international social surveys are the World Value Survey (WVS), the European Values Study (EVS) and the European Social Survey (ESS). However, compared to the other surveys, the European Social Survey allows greater precision in the calculation of the regional trusting attitude and intensity. Moreover, it guarantees sampling stratification at the intra-national NUTS-2 level.

In particular, we exploit a specific question from the four rounds of the ESS (2002, 2004, 2006, 2008):

"Using this card, generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people? Please tell me on a score of 0 to 10, where 0 means you can't be too careful and 10 means that most people can be trusted."

The regional measure of "generalized trust" is constructed using the weighted average of responses to the above question for the 183 NUTS 2 regions of 16 European countries.[5] The data can be directly

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[4]In Solow's words: *"if social capital is to be more than a buzzword, something more than mere relevance or even importance is required. Those cultural and social formations should be closely analogous to a stock or inventory, capable of being characterized as larger or smaller than another such stock. There needs to be an identifiable process of investment that adds to the stock, and possibly a process of 'depreciation' that subtracts from it. The stock of social capital should somehow be measurable, even inexactly. Observable changes in it should correspond to investment and depreciation."* (Solow, 1995, pp. 36)

[5]The use of weighted data mitigates some of the problems of survey data documented in Faiella (2010).

downloaded from the ESS website.[6] For the 2002 and 2008 waves of the ESS, Figure 2 presents the regional levels of generalized trust, with darker colors denoting regions where citizens are more trusting towards the others. Interesting indications come from these pictures. First, generalized trust seems unevenly distributed across European regions. Denmark, Belgium, Holland are the countries with the highest levels of trust. Central-Eastern Europe and part of Italy are dominated by low trust regions. It is worth noting, however, that differences in the level of trust do not just emerge across countries, but also within countries (intra-nationally). Further, both clusters of regions with high levels of trust and clusters with low levels of trust seem to emerge. Again, these are both intra-national and inter-national. This is particularly evident by looking at Belgium, France, Germany, Holland, Italy, Spain and Portugal.

This pattern confirms the idea that communities tend to share values with their neighbors. To some extent, this regional dimension seems to overcome the national dimension, as regions share common values also across national borders. This evidence corroborates the view that dis-aggregating the data at the regional level may yield interesting information, otherwise hidden at the national-level. Generally, regions with high (low) levels of trust tend to be located closer to other regions with high (low) levels of trust. While this spatial pattern seems stable over time, some changes in trusting attitude can also be spotted. This issue is going to be investigated later in the paper.

Figure 1: Spatial Distribution of Trust

Generalized Trust (2002)   Generalized Trust (2008)*
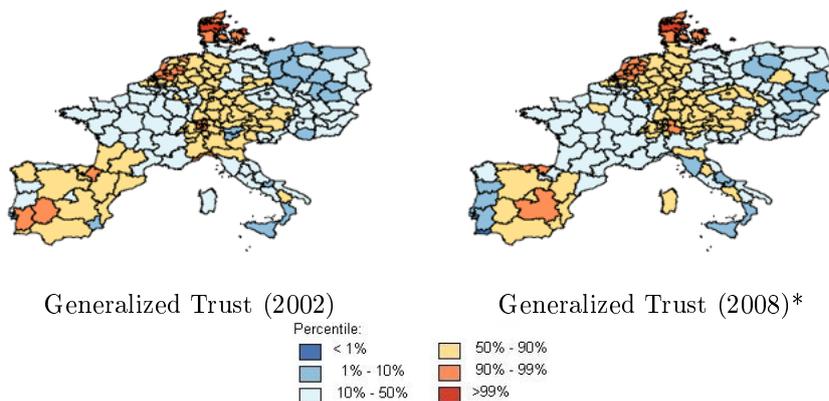
*Data for Italy and Luxembourg are from the 2004 wave

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[6]Later, for the space-time analysis, in order to include a reasonable number of time periods, we were unfortunately forced to drop some countries, and most notably Italy, where the surveys were conducted in two years only.

3 Methodology

3.1 Spatial Association

In order to assess the degree of regional spatial association of "trust", we first employ basic exploratory space data analysis (ESDA) techniques. In particular, we first compute a simple global spatial statistic, such as the Global Moran's I (see Anselin, 1995) :

$$I = \frac{\sum_i \sum_j w_{ij}(x_i - \overline{x})(x_j - \overline{x})}{m_2 \sum_i \sum_j w_{ij}}, \tag{1}$$

where $w_{ij} = 1$ if region i is *contiguous* to region j, and viceversa; $\overline{x}$ is the average and $m_2 = \sum_i (x_i - \overline{x})^2/n$ is the variance of the target variable, x_i. Moran's I lies in the interval $[-1, +1]$, ranging from perfectly negative to perfectly positive spatial correlation (see Myint, 2010, for further details).

Then, we calculate the local indicators of spatial association (LISA), which allow the decomposition of Global Moran's I, and consider the graphic counterpart, i.e. the Moran's scatterplot (see Anselin, 1996). Local Moran's I for observation i may be defined as:

$$I_i = (x_i - \overline{x}) \sum_j w_{ij}(x_j \overline{x}). \tag{2}$$

Clearly, Local Moran's I and Global Moran's I are linked, as shown by Anselin (1995), who proves that the sum of Local Moran's I is proportional to Global Moran's I; the numerator of (1) is the sum of (2) across i, while the denominator is equal to the factor of proportionality γ:

$$\gamma = m_2 \sum_j w_{ij}. \tag{3}$$

3.2 Exploratory Space-Time Data Analysis (ETSDA)

The ESDA analysis gives a static representation of the degree of spatial association of our variable of interest. As mentioned above, however, important questions arise with respect to the spatial dynamics of trust and the probability of spatial change, i.e. regions changing their trusting attitudes in relation to the trusting attitudes of neighbors. Hence, we further perform an Exploratory Space Time Data Analysis (ESTDA). Formally, following Rey, Murray and Anselin (2011) and Rey and Sastré-Gutièrrez (2010), the LISA for location i at time t is:

$$L_{i,t} = \frac{z_{i,t} \sum_j w_{i,j} z_{j,t}}{\sum_i z_{i,t}^2} \qquad (4)$$

where $z_{i,t}$ is the value of our target variable at location i at time t, expressed in terms of deviations from the mean. The approach can be best understood by looking at the transitions of points in the four quadrants of High-High, High-Low, Low-High, Low-Low regional trusting attitudes in successive Moran scatter plots, as explained in Figure 2. Changes in the neighboring regions level of trust with no changes in regional values, will be reflected in vertical shifts from quadrants II to III or from I to IV, and viceversa. Changes in regional values of trust with no changes in neighboring regions' values will be reflected in horizontal shifts, from quadrant II to I or from IV to III, and viceversa. Instead, changes in the trusting attitude of a region and its neighbors, will be associated with movements from I to III and II to IV.

These transitions can be associated to a matrix of Markovian probabilities, where the ijth entry, $p_{ij}^{(n)}$, of the matrix P^n, gives the probability that the Markov chain starting in state i will be in state j after n steps. Values on the main diagonal of this matrix will indicate the probability of no spatial change. Off-diagonal values will reflect the probability of regional spatial change.

Figure 2: Interpretation of transitions

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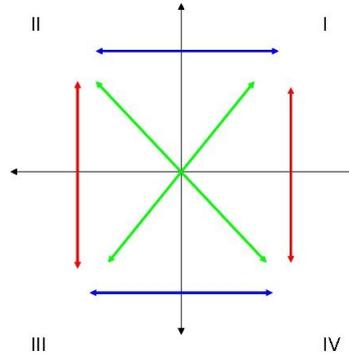
4 Results

4.1 LISA Analysis

Figure 3 presents Moran scatterplots for the regional measure of "generalized trust".[7] These clearly show a degree of positive spatial association of regional trust levels, as it is evident from the large number of observations along the Low-Low to High-High direction and from the Moran's I statistics, increasing from around 0.42 in 2002 to 0.65 in 2008.[8] Interestingly, the degree of spatial association seems to increase over time, indicating a (positive or negative) contagion of trusting attitudes across regional borders.

Figure 4 further illustrates such degree of spatial association, highlighting a number of Low-Low (mostly in the Center-Eastern European countries and the Center-Southern Italy) and High-High (mostly in the Center and North of continental Europe) clusters of trust. Interestingly, these clusters of regions lie both within the same country (e.g. France), and across national borders (e.g. between Holland and Belgium or France and Switzerland, the North of Italy and Switzerland in 2002), indicating that the "forces" of regional proximity may be stronger than those of national borders, which in broad terms may include formal institutions and national culture. This evidence, again, validates the initial quest for investigating the regional dimension of social capital. Interestingly, these clusters seem to be persistent over time. We further explore this issue in the next paragraph.

Figure 3: Moran Scatterplots

Generalized Trust (2002)   Generalized Trust (2008)

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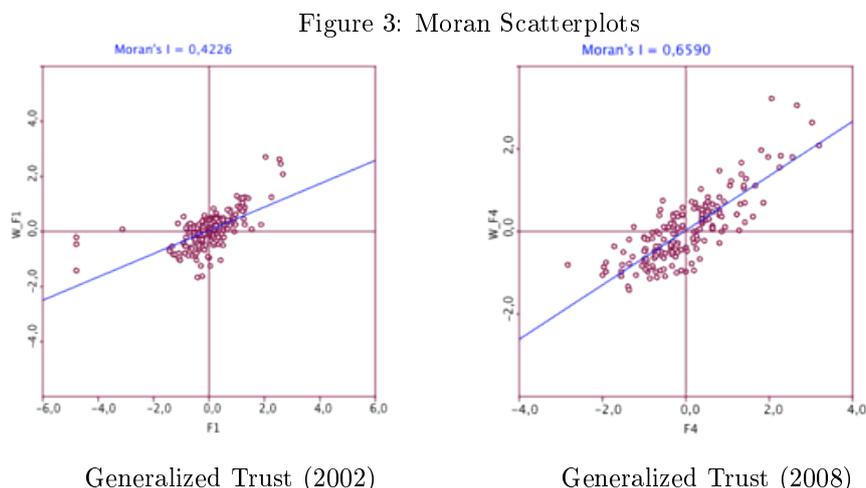
[7]The results presented are obtained under queen contiguity, i.e. where two regions are considered "neighbors" if they share at least one border or a vertex. Using rook contiguity, i.e. where only shared borders are considered, did not substantially affect the results.

[8]In these plots, data for Italy and Luxembourg is from the 2004 wave.

Figure 4: Spatial Clusters

Generalized Trust (2002)   Generalized Trust (2008)*

LISA Cluster Map: Low-Low
Not Significant   Low-High
High-High   High-Low

*Data for Italy and Luxembourg are from the 2004 wave
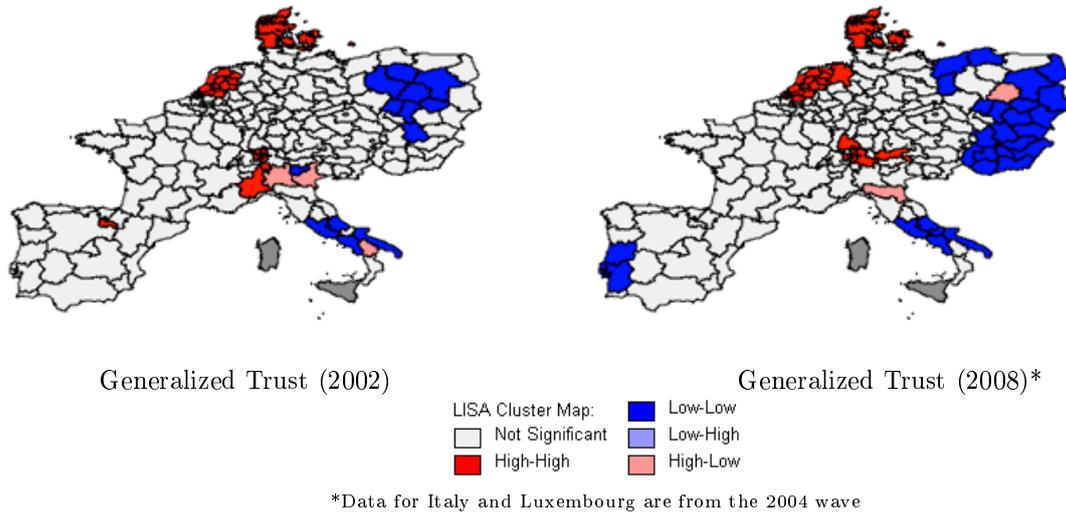
4.2   Space Time Data Analysis

The above analysis identifies the presence of clusters in the trusting attitude of citizens across European regions in a given point in time. Given the importance of trust for economic growth and development, it may be important to assess how the evolution of trust in a region is influenced by the evolution of trust in neighboring regions. Hence, as a next step, we assess how regional trusting attitudes change over time conditional on proximity. In order to investigate this issue, we compute the LISA transition probabilities both unconditional and conditional on neighbors values. Further, we apply two types of controls to the analysis. First, we account for the possibility that trusting attitudes may change over time (thus across waves if the ESS) simply because of common time effects, such as positive or negative shocks affecting all regions alike (e.g. booms or busts in the global or European economic cycle). Second, we control for effects which are common to regions within a country, generally associated to the national border (e.g. national identity, formal institutions, etc...). From the methodological standpoint, these controls are easily performed by replicating the standard analysis after "filtering" out wave and country effects. This can be achieved by

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taking the residuals of regressions of regional trust on wave and country dummies, as follows:[9]

$$x_{it} = \alpha_0 + \alpha_t \delta_t + \epsilon_{it},$$

$$x_{it} = \alpha_0 + \alpha_i + \alpha_t \delta_t + \varepsilon_{it},$$

where δ_t are wave fixed effects, α_i are country fixed effects and ϵ_{it} and ε_{it} are the usual disturbances.

In order better capture the spatial dynamics of trust, we increase the temporal dimension to the four waves of the ESS. Unfortunately, this implies dropping for this part of the analysis two countries (Luxembourg and Italy), reducing the number of regions from 183 to 161.

Table 1 presents the LISA transition probabilities. The analysis is replicated for the data without controls and after controlling for wave effects and wave and country effects. This allows us to gauge the role of country effects beyond that of wave effect. Some results are worth mentioning. First, looking at the LISA probabilities without controls, we note the high probabilities on the main diagonal, indicating a high degree of spatial "stickiness". In general, there is very little probability of spatial change: regions with high (low) levels of trust will sit next to regions with high (low) levels of trust. Very small probabilities are associated with spatial change, i.e. off-diagonal elements of the matrix. Results are largely similar when we control for wave effects. Probabilities on the main diagonal are always larger than probabilities off-diagonal. There is a moderate increase in the probabilities associated with the main diagonal of the Moran scatterplot, i.e. staying in HH or LL, and a moderate decrease in the probabilities associated with the secondary diagonal of a Moran scatterplot, i.e. staying in LH or HL. With respect to the substantial increase in off-diagonal probabilities, it seems that starting from a positions such as LH, a region is more likely to stay in LH or, alternatively, equally likely to become a high trusting region (move to HH) or see a decline in the neighbors trust (move to LL). If a region is in HL, it faces similar probabilities of staying in HL, of becoming less trusting (LL) or seeing neighbors become more trusting (HH). In all cases, controlling for wave effects off-diagonal probabilities are always smaller than the ergodic. Interestingly, controlling for both wave and country effects seems to dramatically reduce probabilities on the main diagonal, increasing the probability of spatial change (the off-diagonal elements). In some instances, these probabilities are larger than the ergodic. This result implies that controlling for the effects of national borders, the possibility of spatial change substantially increases. In other words, national borders (and the forces they synthesize) seem to apply some degree of resistance to regional spatial change. Removing their effect reduces the probability of staying in the same

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[9]Residuals are rescaled to avoid negative numbers.

cluster. However, this effect is at work not only on LL clusters, but also on HH clusters. While the first can be considered a positive effect of national borders, the second clearly is not. From a European integration perspective, national borders seem to prevent the spreading of similar values and beliefs, and trust in this example.

Table 1: Trust transition probabilities (2002-2008)

	No Controls				Wave Controls				Country & Wave Controls			
	HH	LH	LL	HL	HH	LH	LL	HL	HH	LH	LL	HL
HH	0.75	0.09	0.04	0.12	0.85	0.05	0.04	0.07	0.47	0.16	0.15	0.21
LH	0.17	0.67	0.16	0	0.23	0.50	0.25	0.02	0.26	0.38	0.29	0.07
LL	0.02	0.10	0.75	0.12	0.05	0.06	0.80	0.08	0.18	0.18	0.48	0.15
HL	0.13	0	0.17	0.70	0.30	0.06	0.32	0.32	0.32	0.08	0.30	0.30
Ergodic	0.27	0.17	0.32	0.24	0.45	0.10	0.36	0.09	0.31	0.20	0.31	0.18

Table 2 presents the transition probabilities conditional on the spatial distribution of trust. For brevity, we only report the results for the original data without controls and for the data after controlling for wave and country effects. Indeed, the above discussion has highlighted the importance of the country effects. Also, to make results more intelligible, we only present probabilities conditional on neighbors being either in the top or bottom 25% of the distribution of trust. Results for the other quartiles of the distribution are available upon request from the authors.

Probabilities in panels a) and b) of table 2 refer to data without any control. As before, the probabilities of staying in the same quartile are larger than the probabilities of changing quartile. This result applies to both cases when neighbors are in the bottom and in the top quartiles of the distribution of trust. Some differences are worth mentioning between panels a) and b). First, the probability of staying in the first quartile (being low trusting) almost halves from 0.72 to 0.39 if neighbors are high trusting, suggesting substantial spillover effects. Interestingly, if a region is in the first quartile, Q1, it is more likely to become more trusting (move to Q2) if neighbors are highly trusting. A similar result applies if a region sits in the second quartile of the distribution of trust. On the other hand, if you are a high trust region in Q4, you are very unlikely to change your attitude, independently of your neighbors trusting attitude.

In panels c) and d), we repeat the analysis after controlling for wave and country effects. We know from table 1 that country effects are relevant when it comes to the spatial distribution of trust. In table 2 we can see how, again, the probabilities on the main diagonal, indicating no spatial change, are substantially

lower when taking into account the country effects. If neighbors are in the bottom 25%, it is more likely to improve on the trusting attitude, as it is easier to move from Q1 to Q2 and from Q2 to Q3. However, it is also easier than before to see regions in Q4 moving to Q3. If neighbors are in the top 25%, it is now more likely a change from Q1, improving the trusting attitude to Q2 and Q3, but it is also easier to see regions starting in Q3 and Q4 and lose trust to Q1 and Q2, respectively. In general terms, there seems to be a decay process in the transition probabilities along the trust distribution: with few exceptions, it is easier to transit to the next lower or higher quartile than to farther away quartiles. This resembles a sort of spatial hysteresis phenomenon, where trust emerges as a slow changing attitude. Also, and importantly, low trust states are more difficult to get out from if your neighbors are also low trust, than high trust states if your neighbors are also high trust. In other words, it is easier losing trust than building trust. Finally, country effects seem to increase the resilience to regional spatial change and to changes in trusting attitude. When they are controlled for, movements along the distribution of trust are more likely. One could say that national institutions help maintaining the trusting attitude of citizens. Unfortunately, this is true for both low and high levels of trust. Formal institutions seem to matter for both the good and the bad.

Table 2: Trust transition probabilities conditional on neighbors

No controls

	a) Neighbors bottom 25%				b) Neighbors top 25%			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Q1	0.72	0.19	0.05	0.05	0.39	0.50	0.05	0.05
Q2	0.2	0.43	0.31	0.05	0.17	0.54	0.25	0.04
Q3	0	0.28	0.56	0.16	0.04	0.21	0.57	0.18
Q4	0.07	0.07	0	0.86	0	0	0.19	0.81

Country and wave controls

	c) Neighbors bottom 25%				d) Neighbors top 25%			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Q1	0.43	0.41	0.07	0.09	0.28	0.50	0.22	0.00
Q2	0.25	0.25	0.39	0.11	0.35	0.35	0.13	0.17
Q3	0.29	0.25	0.29	0.17	0.31	0.22	0.22	0.25
Q4	0.12	0.00	0.29	0.59	0.16	0.29	0.24	0.32

5   Conclusions

Recent literature has stressed the importance to look at social capital from a regional perspective. In this paper, we follow this perspective and concentrate on generalized trust, one of the values identified by Guiso,

Sapienza and Zingales (2010) and Tabellini (2010) as a key ingredient of the civicness of a community and a determinant of regional growth and development. As an attitude strongly dependent of contacts, trust is probably more related to geography and proximity than other values and beliefs.

In this paper, then, we have empirically investigated the role of proximity in shaping trust across regions. In particular, we have employed exploratory space data (ESDA) and exploratory space-time data methods (ESTDA) to investigate the degree of spatial association and space-time evolution of generalized trust, measured using European Social Survey data for NUTS-2 regions of continental Europe.

A number of interesting results have emerged from the analysis. First, there is a degree of heterogeneity in the trusting attitude of the citizens of European regions. Differences in the level of trust arise both across countries (inter-nationally) and within countries (intra-nationally). Similarly, clusters of regions with high levels and low levels of trust emerge both intra-nationally and across borders. Further, Moran scatterplots show that regional trust is characterized by positive, and increasing over time, spatial association.

Over time, the pattern of trust across European regions seems to be characterized by a strong spatial persistence or "stickiness" with low probability of spatial change: regions with high (low) levels of trust tend to stay next to regions with high (low) levels of trust. Interestingly, controlling for the effects of national borders, i.e. country effects, increases the probabilities associated with spatial change. This provides evidence that national borders tend to increase the resistance to regional spatial change. This effect is at work not only on the resilience of high trust clusters, which may be a positive effect, but also on the resilience of low trust clusters, which may be a negative effect. From a European integration perspective, this also implies that national borders still seem to relevant in preventing a common European space of values and beliefs, and trust in this example.

Further, the transition probabilities conditional on neighbors show substantial spillover effects in regional trusting attitudes: the probability of remaining low trusting almost halves if neighbors are high trusting. On the other hand, if you are a high trusting region, you are very unlikely to change your attitude, independently of your neighbors. In general terms, it seems possible to identify a decay of transition probabilities, or a sort of "spatial hysteresis", along the trust distribution, as it is easier to transit to the next lower or higher quartile than to jump to farther away quartiles. Trust, after all, is a slow changing attitude and requires time to be built. Importantly, it is more difficult to exit a low trust state if your neighbors are also low trust, than to exit a high trust state if your neighbors are also high trust. In other words, losing trust is easier than building it. Finally, country effects make spatial changes in regional (low or high) trusting attitudes more difficult, probably cause they help maintaining the national trusting attitudes of citizens. Unfortunately,

this is true for both low and high levels of trust, indicating that formal institutions matter in both the good and the bad sense.

In general, dis-aggregating trust at the regional level does seem to yield interesting information, otherwise hidden at the national level. From the policy standpoint, the existence of regional clusters of trust and their persistence over time may be a further obstacle to convergence, especially for poorly trusting regions trapped in poorly trusting surroundings, or "spatial traps of social capital". To the extent that social capital and trust are important determinants of development, regional policies should also take stock of this issue. Investigating the determinants of regional trusting attitudes and identifying the appropriate policies to break the vicious circles of low trust clusters can be an interesting sequel to this work.

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