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Marini, Annalisa and Navarra, Pietro

University of Pennsylvania, University of Messina and University of
Pennsylvania

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Autonomy, Social Interactions and Culture

Annalisa Marini and Pietro Navarra*

Abstract

The present paper, using a social interactions model, studies the impact of culture on autonomy of immigrants. The results suggest that: (i) immigrants' autonomy is largely influenced by the autonomy of individuals living in a host country; (ii) some immigrants are better off in countries and regions with better institutional environments. The results are robust to sensitivity checks. The contributions of the paper are as follows. First, we estimate a social interactions model that models both the formation of social interactions and the sorting of individuals to study the impact of culture on individual autonomy. Second, we estimate a model that analyzes the impact of both confidence in the individual and collective culture on individuals' decisions. Finally, since this is an observational learning model, policy suggestions may be drawn from the analysis.

*Corresponding author: Marini, University of Pennsylvania, 249 S 36th Street Philadelphia, PA19104, marinia@sas.upenn.edu. Navarra, University of Messina and University of Pennsylvania. We are very grateful to Steven Durlauf for his comments and suggestions. The responsibility for the content of the paper is entirely ours. While working at this paper the authors received financial support from the John Templeton Foundation. The opinion expressed in this publication are ours and do not necessarily reflect the views of the John Templeton Foundation.

1 Introduction

Since the pioneering work by Banfield (1958), the interest of economists on the impact of culture on the functioning of economic systems has grown steadily (see Guiso, Sapienza and Zingales, 2012, for a survey of the literature). Culture may be regarded as a particular type of intangible public good that combines together a bundle of personal traits and individual values shared by those individuals belonging to a specific geographic, religious or ethnic group. Examples of personal traits and individual values that are expected to affect economic outcomes are honesty, morality, attitudes toward religion and social justice, openness to strangers, willingness to work hard and the recognition of the importance of family ties (Barro and McCleary, 2003; Guiso, Sapienza and Zingales, 2004; Tabellini, 2010; Algan and Cahuc, 2010; Alesina and Giuliano, 2015).

If cultural traits and values affect economic outcomes, an important question is to examine how they emerge in a community of individuals. Evolutionary models of cultural transmission point out that culture can be either originated from simultaneous social interactions - horizontal transmission - or inherited from earlier generations - vertical transmission - (Cavalli-Sforza and Feldman, 1981; Bisin and Verdier, 2011). Therefore, culture is seen as the result of an historical component, made of habits and values received from parents and earlier generations, as well as of a simultaneous component, represented by beliefs generated by social interactions and informal networking.

In this paper we select a specific cultural trait that is likely to affect economic outcomes and investigate whether people who have moved from one regional context to another either conform or resist to the prevailing trait existing in the place of destination. This behavioral choice is not neutral for the prosperity of a society since there are some cultural values that are more likely to lead towards economic progress and others that are expected to be more conducive towards economic decline (Alesina and

Giuliano, 2015). Thus, investigating how such behavioral choices emerge sheds light on our understanding of the impact of culture on economic outcomes.

The cultural trait we focus on in this study is the extent to which individuals believe that life outcomes depend on their effort and choices. A large body of work points out that individuals who view economic success as related to their own deliberate decisions are more likely to work hard, innovate and undertake new economic initiatives (Tabellini, 2010; Phelps, 2013). These individuals, therefore, are more likely to display entrepreneurial attitudes, start up new businesses, and generate economic prosperity and growth (Gorodnichenko and Roland, 2011). To capture the extent to which individuals believe to be masters of their own life we refer to a recent line of research that examines the relationship between individuals autonomous behavior and economic outcomes such as income mobility and welfare spending, entrepreneurship and subjective well-being (Bavetta and Navarra, 2012; Bavetta, Maimone and Navarra, 2014).

To investigate whether and the extent to which individuals, moving from one place to another, either conform or resist to the level of individual autonomy prevailing in the destination community, we observe the behavior of immigrants. Individuals who moved from one geographical region to another, face the choice of whether to live according to the beliefs and values shared by the people living in the new destination or to stick with their own cultural traits.

To examine the dynamics through which cultural traits either are or are not transmitted in society from the indigenous population to immigrants, we construct a social interactions model in which individuals make three sequential decisions. First, they decide whether they want to migrate. Second, they choose the place where they want to go. Third, they decide whether to conform to the prevailing degree of autonomy in decision-making existing in the place where they have chosen to migrate. The destination regions where individuals decide to migrate are grouped in two different

sets of countries according to their level of either political or economic freedom. This choice responds to the fact that the exercise of autonomous behavior requires institutional environments in which constraints to individual choices ought to be limited (Sen, 1999; Bavetta and Guala, 2003). Therefore, the greater (smaller) the extent of either economic or political freedom existing in a given country, the wider (narrower) the set of choices open to individuals in that country and the larger (smaller) the scope for the exercise of autonomous behavior (Bavetta, Maimone and Navarra, 2014).

We further investigate the transmission of autonomous attitudes comparing the behavior of individuals moving to regions located in two different geographical areas that are characterized by different attitudes towards individual responsibility and self-governance in life: the United States (US) and Europe (EU). There is an extensive literature in economics that explains the different levels of welfare spending in the US and Europe on the basis of different beliefs that individuals have in considering achievements in life as the outcome of their own effort and commitment (Alesina and Glaeser, 2004; Benabou and Tirole, 2006). Therefore, we perform a further analysis by grouping regional destinations of immigrants in two categories: US and EU regions.

To carry out the empirical analysis we adopt the theoretical framework in which individuals' behavioral decisions are driven by their own expectations about the average behavior shared by other people in society (Brock and Durlauf, 2006; Blume et al., 2011). Therefore, our analysis allows us to provide theory-driven evidence on the impact of collective cultural beliefs on individual beliefs through social interactions.

We use data from the World Values Survey to analyze the transmission of autonomous behavior and run a sequential logit model. We use the information on immigrants available from the wave covering the period 1994-1998 and investigate what influences individuals' migration, location and behavioral decisions. We allow immigrants coming from different countries to sort in more than fifty countries grouped as defined above and repeat

the analysis to investigate what drives the location and behavioral decisions of immigrants joining either an European region or a region in the United States. The results of the empirical analysis indicate that culture is important to explain immigrants' decisions and in particular that immigrants' autonomy is largely influenced by the average autonomy of the individuals living in the host region or country; also, some categories of immigrants may be better off in countries with better institutional environments.

Our work contributes to the existing literature in several respects. First, while the analysis of the impact of culture on economic outcomes is widespread at a macroeconomic level, the empirical research investigating the impact of cultural beliefs on individual decision-making is still at its infancy and largely unexplored. This paper represents one of the few attempts in this direction. Second, following Marini (2016) we estimate a model of sequential decisions where individuals, after deciding whether to migrate, sort themselves in a given destination region and, subsequently, make a behavioral choice. To the best of our knowledge, this is the first time that this methodology is applied to explain cultural transmission of individual freedom in social interactions models. Third, our empirical results indicate that individual beliefs are shaped by individuals' expectation about collective cultural beliefs. Our study analyzes the impact of average beliefs and expectations rather than individual preferences. This implies that the empirical model used in this paper falls in the category of observational learning models (Manski, 2000). Therefore, our findings may provide important policy implications that call for further empirical investigations on the relationship between cultural traits and economic outcomes. Fourth, differently from the previous literature that examined vertical transmission of collective beliefs across generations of immigrants (Guiso, Sapienza and Zingales, 2008), in this study we examine and compare also the horizontal transmission of collective beliefs from the indigenous population to immigrants and compare whether there are differences in the integration dynamics of immigrants either in countries characterized by different degrees of

economic and/or political freedom or in the United States and Europe.

The paper is structured as follows. In Section 2 we motivate our work and explain how it relates to the relevant literature. In Section 3 we introduce the theoretical framework, describe the empirical methodology and present the data used in the analysis. In Section 4 the results for the analysis on political and economic freedom are presented, we carry out a sensitivity analysis to assess the reliability of our findings and comment on the results obtained. Section 5 presents the results for the sorting of immigrants in either the United States or Europe. In Section 6 we discuss the results and draw some concluding remarks.

2 Literature Review

Our paper builds on three different strands of literature. The first concerns with the relationship between culture and economic outcomes. The second deals with the issue of the transmission of cultural traits amongst immigrants. Finally, the third is related with social interactions models to explain horizontal transmission of culture.

The last decade witnessed a growing interest on the role of culture on economic outcomes (Fernández, 2011; Spolaore and Wacziarg, 2013; Alesina and Giuliano, 2015). Culture is broadly defined as the set of preferences, values, and beliefs that distinguish one social group from another (Hofstede, 1984). Fernández (2008) summarizes three different empirical approaches to study the role of culture in economics. While the first adopts survey-based indicators of beliefs and values, the second compares economic outcomes of immigrants to natives in a host country. Finally, the third approach uses historical case studies as natural experiments. In this paper we exploit the large heterogeneity in values and beliefs across individuals provided by the World Values Survey to examine whether a specific cultural trait is transmitted from the indigenous population to immigrants. Therefore, our analysis is based on both the first two approaches suggested by Fernández

(2008).

The cultural trait we focus on in this study is the level of free choice and control individuals feel to have over their lives. While this variable has been already used in the literature to evaluate the effect of cultural values on economic performance (Tabellini, 2010), in this paper we interpret its meaning along the lines suggested by the freedom of choice literature (Bavetta and Peragine, 2006; Bavetta and Navarra, 2012): Greater freedom of choice and control over one's life grants individuals with higher autonomy in decision making. Individual autonomy and independence has been argued to be an important determinant of self-realization, happiness, entrepreneurial attitudes, innovation and risk taking, dynamism and, more generally, better economic performances (Bentz and Frey, 2004; Phelps, 2013; Doepke and Zilibotti, 2013; Bavetta, Maimone and Navarra, 2014).

Our work is also related to a strand of research that examines the issue of how values and beliefs are transmitted and of how, if at all, are immigrants integrated. A recent literature analyzing the relationship between individual identities and social contexts emphasized how networks and social ties systematically affect individual behavior when persons make choices and undertake actions that are economically relevant (Constant and Zimmermann, 2008; Akerlof and Kranton, 2010). Herding behavior, compliance and homophily generally prevail against non-conformity in decision-making (Akerlof, 1997). On the other hand, economic theories of cultural integration examine and compare marginal gains and costs of different integration strategies. The main result of these studies indicate that the prevalence of an oppositional culture in the minority group can be sustained only if the group is sufficiently large, the economic cost of the resulting actions sufficiently small and there is enough segmentation in role models (Lazear, 1999; Bisin et al., 2011).

Finally, the paper also refers to the social interaction literature. Social interactions models can be considered observational learning models, which allow individuals to change and update their beliefs according to their

experience (Manski, 2000). Although the theoretical literature on social interactions is quite large (see Manski, 1993, 2000; Brock and Durlauf, 2001, 2006, 2007) the empirical literature is still developing. Indeed, following the most recent advances of this literature (e.g. Brock and Durlauf, 2006; Zanella, 2007; Blume et al., 2011) and the empirical application (Marini, 2016) we estimate a social interactions model that, after allowing individuals to choose if they want to migrate or not, models both the sorting of immigrants into regions and their decision about whether they feel to be autonomous. The use of a sequential logit model allows us also to perform a sensitivity analysis and to assess whether and the extent to which the results are sensitive to changes in the assumptions on unobservables. Although, given the cross-sectional structure of the analysis, this framework does not allow us to fully uncover the reasons why individuals migrate, the sensitivity analysis enables us to check if the results are sensitive to changes in unobservables and to address the critiques raised by Cameron and Heckman (1998) when estimating discrete choice models that model individual decisions in a single time framework. The main innovation with respect to this literature is that to the best of our knowledge this is the first application of a social interactions model that estimates the impact of social interactions on the formation of individual freedom (i.e. *autonomy freedom*, henceforth AF) by means of a sequential logit model. As explained in the next section, this theoretical framework is crucial to overcome limits of the social interactions models, namely the selection and the reflection problem (Manski, 1993, 2000).

3 Framework and Data

3.1 Theoretical Framework

In the analysis we use a model of social interactions to investigate the impact of culture on individual decisions of immigrants sorting in different

countries/regions.

The theoretical framework of our study is developed by following the recent literature on social interactions (e.g. Brock and Durlauf, 2006; Zanella, 2007; Blume et al., 2011). These studies and the related literature are particularly appealing because they create a link between theory and empirics of social interactions, allowing the researcher to estimate a model where both the sorting of individuals into groups (e.g. in our case the location decision) and the behavioral decision (in this study the decision on whether to be autonomous) are taken by an individual.

Let each individual be indexed by $i = 1, \dots, I$. The analysis of social interactions requires that each individual is also a member of one group $g = 1, \dots, G$. The membership of a group can be either imposed by construction or chosen by the agent. In the first case, the model is a random assignment model. In the second case, which is the reference framework for our empirical analysis, the model is a neighborhood model in which agents are not randomly assigned, but are assumed to choose the place they want to live in. However, we can assume that the model is a global interactions model since the destination regions are large enough that each agent cannot be assumed to have social interactions with all the other agents of the population living in the same region (Brock and Durlauf, 2001). Finally, assuming that an individual is choosing a place to live implies that the individual is moving; thus, in order to make this assumption hold we have to distinguish between migrants and non-migrants first (first transition), then we should allow migrants to take the location decision (second transition) and finally their behavioral decision (third transition).

The choice of the group as geographical entity is justified by the fact that cultural beliefs are social outcomes and they are more likely to differ across regions rather than across groups defined according to a different non-geographical criterion. Although better definitions of regions would be available (e.g. NUTS classifications) we decided to use the variable defining regions in the WVS (x048) in order to allow a higher level of variability of the

regional cultural endowments. For some of the countries this classification is identical to the NUTS definitions so we can assume that results would not substantially change.

Individuals decide if they want to migrate or not according to the maximization of a payoff function; our empirical framework is based on Brock and Durlauf (2006) and Zanella (2007), where each individual maximizes her/his utility function:

$$V_i = f(k_g, \rho_g, h_{i\omega}, J_g m_{ig}, \varepsilon_{ig}, \varepsilon_{ig\omega}) \quad (1)$$

where k_g are benefits and ρ_g are costs of living in a given region; $h_{i\omega}$ represents the private deterministic utility of individuals in group g made up by a series of characteristics proper of the individual, X_i , and a series of region-specific characteristics, Y_g ; m_{ig} is the social utility or social interactions term (i.e. individual expectations about the behavior of other individuals in a region)¹ and $\varepsilon_{ig\omega}, \varepsilon_{ig}$ reflect the random private utility, which is in part specific of the individual and in part specific of individuals living in a region. Finally, J_g is the parameter that measures the strength of social interactions. It has been shown by the previous literature (e.g. Brock and Durlauf, 2001, 2006; Zanella, 2007) that when complementarities are strong enough, J , jointly with the roles played by both the private and the random utility, determines the presence of multiple equilibria and the possible presence of social traps due to resilience of low type outcomes (e.g. individuals conform to low levels of either social or individual outcomes). Thus, the presence of a sizeable J is a necessary condition for the existence of multiple equilibria.

In our model the individuals make three decisions: the first decision is a choice between migrating (1) or not migrating (-1); the second decision is a choice between migrating to a destination (1) or another (-1) conditional on migrating and finally the third decision is about being autonomous (1)

¹As it is commonly assumed by the social interactions literature, $m_{ig}^e = m_{ig}$, that is, assuming self-consistency (i.e. rationality of individuals) implies that the subjective expectations equal the objective probability. This assumption closes the model.

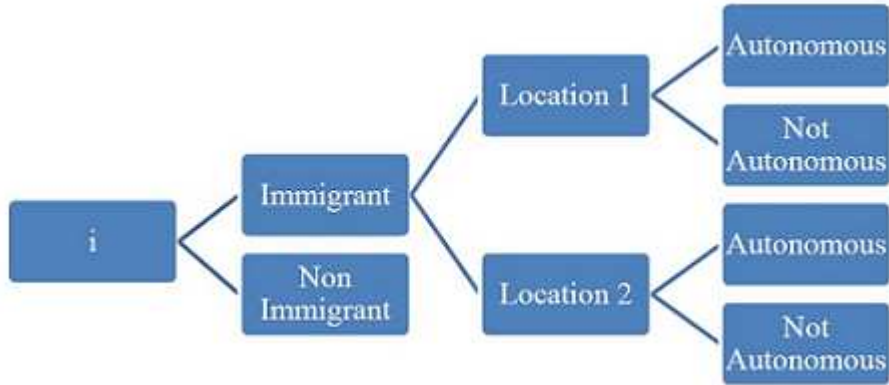


Figure 1: Decision Tree

or not being autonomous (-1) conditional on living in the recently joined destination. In each of these three choices the individual chooses 1 only if:

$$V(1) - V(-1) > 0 \quad (2)$$

that indicates that the individual makes a choice only if the corresponding payoff is higher than the payoff (s)he could get from making the alternative choice.

3.2 The Empirical Model

Following a framework similar to the one adopted in Marini (2016) we use a sequential logit model (Mare, 1980; Maddala, 1983; Buis, 2011) to estimate the decision process described in Figure 1, where individuals undertake three sequential decisions: the migration decision, the location decision and the behavioral decision. Several reasons support our choice of considering the behavioral choice as the outcome of a sequential decision process. First, it is more realistic to think that individuals who migrate to a new environment make a behavioral choice only after they have sorted themselves into destination regions. This allows them to observe the collective behavior of

individuals living in such regions and form realistic expectations accordingly. Second, the use of a sequential logit model allows the researcher to overcome the standard problems characterizing social interaction models: The reflection and the self-selection problems (Manski, 1993, 2000). Indeed, the estimation of a social interactions model by means of a linear-in-mean model may generate identification problems due to the co-movements of contextual effects (Y_g) together with the expectations on average beliefs (m_{ig}). This makes impossible to disentangle their separate effect on individual beliefs. The use of nonlinear estimators solves the reflection problem and allows model identification (Brock and Durlauf, 2007; Blume et al., 2011). The sequential structure of the model helps us to deal with the self-selection problem.

The econometric model can be formalized as follows. We assume that individuals decide whether to migrate $m \in (y, n)$, where y and n mean they choose to either migrate or not to migrate, respectively. If they decide to migrate they have to select a destination group/region $g \in (0, 1)$. More specifically, we allow immigrants to sort in countries/regions that are, alternatively: a) either politically free or not politically free; b) either economically free or not economically free; c) either in the United States or in Europe. Therefore, 1 indicates alternatively economies that are either politically free or economically free or in Europe, and 0 indicates economies that are alternatively either not politically free or not economically free or in the United States. Once they have chosen where to migrate, they decide how to behave $\omega \in (L_\omega, H_\omega)$, where L_ω indicates that individuals choose not to be autonomous and H_ω indicates that individuals choose to be autonomous.² For the sake of simplicity, we refer to those individual who

²The behavioral choice may be considered as an actual decision and behavior resulting from the belief of the individual about his/her own autonomy. Also, since immigrants have been interviewed while they were already in the host country, and given that we evaluate the behavioral decision across groups of countries that are similar in terms of economic and/or political institutions, we assume the absence of discrepancies in interpretation of the question. For this reason, we do not consider necessary the use of vignettes (e.g. King and Wand, 2007) to compare survey answers. Any further hetero-

make the H behavioral choice as H-type individuals and those who make L behavioral choice as L-type individuals; the same can be said for the location decisions between economically free countries and countries that are not economically/politically free.

Thus, we can formalize the three decisions as follows. First of all an individual faces a migration decision:

$$\begin{aligned}
P_{im} = p_1 = \Pr(im = 1|x, u) = & \Lambda(\beta_{01} + \beta_{11}age + \beta_{21}age2 + \beta_{31}eduL + \\
& + \beta_{41}eduH + \beta_{61}female + \beta_{71}married + \beta_{81}child + \beta_{91}ft + \beta_{101}pt + \\
& + \beta_{111}Self - empl + \beta_{141}u)
\end{aligned} \tag{3}$$

where m indicates the migration decision, P_{im} the probability of migrating.

If the individual decides to migrate, (s)he has to choose the region (s)he wants to move to: therefore, (s)he faces the location decision where $g \in (0, 1)$ on the basis of the chosen destination,

$$\begin{aligned}
P_{ig|m=1} = p_2 = \Pr(ig = 1|x, u, im = 1) = & \Lambda(\beta_{02} + \beta_{12}age + \beta_{22}age2 + \\
& + \beta_{32}eduL + \beta_{42}eduH + \beta_{52}eduavg + \beta_{62}female + \beta_{72}married + \\
& + \beta_{82}child + \beta_{92}ft + \beta_{102}pt + \beta_{112}Self - empl + \beta_{122}difftrust + \\
& \beta_{132}afavg + \beta_{142}u)
\end{aligned} \tag{4}$$

where $P_{ig|m=1} = p_2$ is the probability for the immigrant to sort herself/himself in region 1.

Finally, once the individual reaches the destination, (s)he has to under-

geny is accounted for by the presence of unobserved heterogeneity.

take the behavioral decision as follows:

$$\begin{aligned}
P_{i\omega|m=1,g=0} = p_3 = \Pr(i\omega = 1|x, u, im = 1, ig = 0) = & \Lambda(\beta_{03} + \beta_{13}age + \\
& + \beta_{23}age2 + \beta_{33}eduL + \beta_{43}eduH + \beta_{53}eduavg + \beta_{63}female + \\
& + \beta_{73}married + \beta_{83}child + \beta_{93}ft + \beta_{103}pt + \beta_{113}Self - empl + \\
& + \beta_{123}difftrust + \beta_{133}afavg + \beta_{143}u) \tag{5}
\end{aligned}$$

$$\begin{aligned}
P_{i\omega|m=1,g=1} = p_4 = \Pr(i\omega = 1|x, u, im = 1, ig = 1) = & \Lambda(\beta_{04} + \beta_{14}age + \\
& + \beta_{24}age2 + \beta_{34}eduL + \beta_{44}eduH + \beta_{54}eduavg + \beta_{64}female + \\
& + \beta_{74}married + \beta_{84}child + \beta_{94}ft + \beta_{104}pt + \beta_{114}Self - empl + \\
& + \beta_{124}difftrust + \beta_{134}afavg + \beta_{144}u) \tag{6}
\end{aligned}$$

where $P_{i\omega|m=1,g=0} = p_3$ is the probability of being an H-type immigrant who decides to move to region 2, and $P_{i\omega|m=1,g=1} = p_4$ is the probability of being an H-type immigrant who chooses to move to region 1. Finally, ω indicates the binary behavioral choice.

The sequential choices in our empirical model are explained by the following socio-demographic independent variables: *age* and *age2* capture each individual's age and its square value, respectively. While *eduL* and *eduH* measure the individual's education level, *eduavg* is the average level of education existing in the destination region. *Female* indicates if the individual is a female, *married* and *single* indicate his/her marital status and *child* if he/she has children. The individual's employment status is captured by the variables *ft*, *pt* and *self-empl* if the individual is either a full-time, or a part-time worker or self-employed, respectively. The difference between the average level of trust in the destination region and that in the region where the individual comes from is *difftrust*. The social interactions term (i.e., $m_i g$ in Eq. (1)) is *afavg*. It represents our variable of interest because it captures the influence of collective beliefs on individual choices over the

three-stages of the decision process. Finally, β_{0j} ($j = 1$ to 4) is the constant term for each of the four decisions and $\beta_{14j}u$ ($j = 1$ to 4) is the error term for equation j .

Before proceeding with the empirical estimation it is important to dwell upon the importance of the coefficients of the unobservables. According to the related literature, unobserved heterogeneity may lead to biased results, even though the unobserved variables are not confounding variables (e.g. Cameron and Heckman, 1998). Indeed, the presence of unobservables may give rise to two distinct phenomena, both arising from the necessity to model a stylized discrete model: the *averaging mechanism* and the *selection mechanism*.

Any logit or discrete choice model consists of a simplification of the reality since all the variables that might have an influence on the modeled decisions cannot be included. This may have consequences that should be properly addressed. Specifically, in a sequential logit model the averaging mechanism refers to the fact that when we estimate the probability of passing a transition in presence of unobserved heterogeneity we are estimating the probability of passing a transition averaged over the excluded variable, which for sake of simplicity can be thought as a weighted average of all the unobserved variables. Said it differently, estimating a model that does not control for the presence of unobserved heterogeneity implies that we are modeling the average probability of passing a transition, while accounting for the presence of unobserved heterogeneity allows to model the original probability that an individual passes the transitions (Buis, 2011). Hence, estimating a model without modeling the presence of unobserved heterogeneity is problematic because in a non-linear model the impact of the regressors on the averaged probability differs from their impact on the probability (Cameron and Heckman, 1998; Allison, 1999).

The selection mechanism, instead, refers to the possibility that a variable that does not affect the first transition will become a confounding variable from the second transition onward due to the self-selection process (Mare,

1980; Cameron and Heckman, 1998). In the context of our empirical model, for instance, we may think at preferences for redistribution: while they do not necessarily affect the migration decision, they may play a significant role in the location decision as well as in the behavioral decision.

Thus, following Marini (2016) we assume that unobserved heterogeneity is normally distributed with mean 0 and standard deviation (σ) equal to 1 and we allow it to be correlated with the variable of interest (*afavg*) to control for the possible presence of endogeneity (Train, 2003; Buis, 2011). We can conceive this variable as a weighted sum of all the weighted variables excluded from the model that could eventually be correlated with our variable of interest. This assumption also justifies the distributional assumption. Furthermore, since this variable is a weighted sum of all other variables, it includes variables that could possibly be both positively and negatively correlated with our variable of interest. This makes the assumption of a positive but not very high correlation ($\rho = 0.25$) reasonable. However, we provide robustness checks to verify whether the results are invariant to the change of these assumptions.

We estimate the model by using the Stata `seqlogit` command (Buis, 2011), which estimates the sequential logit by maximum likelihood and the scenarios by means of simulated maximum likelihood. Indeed, as specified by the literature (Buis, 2011; Cameron and Heckman, 1998), assuming the presence of unobserved heterogeneity that follows a normal distribution and that could be correlated with the regressors included in the analysis does not allow to get a closed form solution for the integrals computing the probability of passing a transition. This can be overcome by using simulated maximum likelihood that uses numerical approximation to compute the probability of passing a transition and the average of all the probabilities (Train, 2003).

3.3 The Data

The data used in the analysis are collected from both survey data and economic data sets and they are both individual-specific and location-specific. Most of the data are taken from the World Values Survey (WVS hereafter) for all the samples. All these variables are defined in Table A that can be found in the Appendix. Although the WVS data contains more rounds, only one of these waves could be used for the analysis because the question on immigrants is asked only in one wave (1994-1998).³ This reduces the sample size and limits the analysis. We are aware that more complete data sets are available for the analysis of migration decision, but unfortunately the WVS is the reference data set for the question on autonomy so we could only use this survey.

For the dependent variable, AF, we use a question taken from the WVS and largely used by the literature on cultural economics (e.g. Tabellini, 2010). The question used is the following: “*Some people feel they have completely free choice and control over their lives, while other people feel that what they do has no real effect on what happens to them. Please use a ten point scale in which 1 means none at all and 10 means a great deal to indicate how much freedom of choice and control you have over the ways your life turns out*”. We derive an indicator taking value 1 if the individual chooses a point greater than 5 and 0 otherwise, as already done in the previous literature (e.g. Marini, 2013).

To build the variable on difference in trust we used answers to the WVS question: “*Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?*”; using this question we constructed an indicator taking value 1 if individuals answer that “*most people can be trusted*” and value 0 otherwise and computed regional aver-

³Another wave contains such information, but for a few countries. Thus, in order to avoid problems of time inconsistency and the presence of multiple observations for a same country across waves only the wave with the most complete information (1994-1998) is kept for the analysis.

ages. We also computed regional averages for the variable indicating the area of origin of immigrants, representing the average level of trust of individuals living in each specific area. The question asks : “*Are you born in this country? Birth country*” and the answer can be yes, indicating that the individual is not an emigrant or it indicates the area of origin, which could be Latin America, USA/Canada, Asia, Europe, Africa, Other or Oceania. Although this is not the real value of the average level of trust in a specific region of origin, we assume that the average level of immigrants from that region is representative of the region itself. Thus, after computing the difference between these two levels of trust, we have higher values for the regions where the average level of trust is higher than the region of provenience of the immigrant.

The variables for demographics are also taken from the WVS data set and are listed in the Appendix. We build the values for the social interactions term as averages over the regions considered. For the law of large numbers we can assume that this average does not differ from the average computed on all the individuals in the region but the respondent.

Finally, we use the indicators of overall freedom available from the Heritage Foundation and the definition of politically free country available from the Freedom House. We classify a country as economically free if the average overall economic freedom enjoyed by the country is higher than the total average overall freedom over the time span considered (1994-1998). We define a country as politically free if it is classified as overall fully politically free over the time framework considered in our study. We reckon that this may be endogenously determined, but it is exogenous at the time of individual decisions.

4 Economic and Political Freedom: Empirical Results

4.1 Descriptive Statistics

Table 1 shows the averages of individual (autonomy freedom) cultural capital endowments for the countries of the sample (columns (1) and (6)), as well as averages of collective (trust) cultural capital (columns (2) and (7)), whether the country is economically free (columns (3) and (8)) or politically free (columns (4) and (9)). As it is possible to notice, countries that are economically free are generally also categorized as politically free, with a few exceptions. The Table indicates that countries that are economically (politically) free have overall higher levels of both trust and autonomy than countries that are not economically (politically) free and the Wilcoxon Mann-Whitney test indicates that they statistically differ across the two samples. Furthermore, the Kruskal-Wallis tests show that the means of the countries in the samples (35 for economic freedom and 36 for political freedom) are jointly statistically different.

Although these averages should be taken as indicative and no causality can be inferred, they clearly support the previous literature (e.g. Tabellini, 2008a; Marini, 2013) that points out the presence of a positive correlation between institutional quality and cultural endowments. Yet, as it has been already stressed along the paper, since these two cultural traits are supposed to be facilitators to economic outcomes (e.g. economic growth and individual efficiency and productivity, see for instance Tabellini, 2010), the economic consequences due to conformism of individuals to different cultural endowments may, in the long term, generate multiple equilibria, social traps and diverging economic paths across countries and regions.

These results are not surprising and confirm what we expected. However, they are particularly interesting for our analysis because they play a crucial role in the regression results. Indeed, regional trust is used to com-

Table 1: Collective and Individual Cultural Capital

Country Average Levels of Culture									
Country	AF	Trust	Economic Freedom	Political Freedom	Country	AF	Trust	Economic Freedom	Political Freedom
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Turkey	0.3663	0.0550	N	F	Spain	0.6266	0.2973	N	N
Belarus	0.3960	0.2407	N	N	South Africa	0.6448	0.1585	Y	Y
Ukraine	0.4163	0.3097	N	N	Slovakia	0.6645	0.2704	N	Y
Russia	0.4337	0.2394	N	N	Czech Republic	0.6766	0.2852	Y	Y
Armenia	0.4729	0.2468	N	N	Uruguay	0.7009	0.2164	Y	Y
Moldova	0.5021	0.2221	N	N	Slovenia	0.7054	0.1554	N	Y
Georgia	0.5910	0.1871	N	N	Argentina	0.7250	0.1757	Y	Y
Macedonia	0.6044	0.0821	na	N	Germany	0.7422	0.3329	Y	Y
Croatia	0.6735	0.5232	N	N	Chile	0.7759	0.2139	Y	Y
China	0.7025	0.2407	N	N	Switzerland	0.7933	0.3696	Y	Y
Nigeria	0.7401	0.1729	N	N	Norway	0.8014	0.6530	Y	Y
Dominican Republic	0.7926	0.2645	N	N	United States	0.8272	0.3594	Y	Y
Mexico	0.8046	0.3115	N	N	Taiwan	0.8284	0.3820	Y	Y
Venezuela	0.8249	0.1375	N	N	Sweden	0.8308	0.5967	Y	Y
Bulgaria	0.4395	0.2860	N	Y	Australia	0.8430	0.4005	Y	Y
Latvia	0.5043	0.2474	Y	Y	New Zealand	0.8698	0.4905	Y	Y
Estonia	0.5619	0.2152	Y	Y	Finland	0.8962	0.4881	Y	Y
Lithuania	0.5692	0.2192	N	Y	Japan	0.5531		Y	Y
Romania	0.6032	0.1870	N	Y					
Hungary	0.6082	0.2274	N	Y					
Not Economically Free	0.5761***	0.2390***	Not Politically Free	0.5712***	0.2369***				
Economically Free	0.7396***	0.3328***	Politically Free	0.7102***	0.3098***				
	[-37.909]	[-22.970]		[-32.500]	[-18.094]				
	(0.000)	(0.000)		(0.000)	(0.000)				
Kruskal-Wallis test			$\chi_{35_{af}}^{2+} = [3569.77]^{***}$	$\chi_{36_{af}}^{2+} = [3575.09]^{***}$					
			(0.000)	(0.000)					
			$\chi_{35_{trust}}^{2+} = [2293.679]^{***}$	$\chi_{36_{trust}}^{2+} = [2399.99]^{***}$					
			(0.000)	(0.000)					

Notes: Country cultural averages are reported. Countries are defined as economically free if the country economic freedom over the period considered is higher than the overall economic freedom; they are defined as politically free if they are overall fully politically free over the period considered. [] report the statistics for the Wilcoxon Mann Whitney two-sample test to test cultural statistical difference across economically (politically) free countries versus not economically (not politically) free countries and for the Kruskal-Wallis (KW) test to test for joint cultural statistical difference among countries belonging to the two samples. p-values are in (). *** Significant at the 1% level, ** Significant at the 5% level, * Significant at the 10% level.

Source: World Values Survey, years 1994-1998.

pute differences in trustworthiness between host region and home area of origin. Regional autonomy is instead the social interactions term observed by the immigrants and used to take their behavioral decision. Thus, if immigrants join a region where individual autonomy is on average low, and, if they decide to conform to what they think is the level of such average and if the impact of such expectation is positive and strong enough, this may generate multiple equilibria and segregation, leading societies with low average autonomy being socially trapped. Indeed, if individuals keep thinking that on average other individuals in a society feel not to have enough control on their own lives, and they conform to such low autonomy, unless a positive shock (capable to make their expectations change and be higher) occur they will keep conforming to such low average behavior (L_ω). This motivates the econometric analysis carried out in the next sections.

4.2 Economic Freedom

4.2.1 Empirical Results

Table 2 (Panel A) shows the results obtained when individuals should decide between migrating to a country defined as economically free or a country that is not economically free as defined in the data section.

In Table 2 and in subsequent table presenting sequential logit estimations, columns (1), (3), (5) and (7) report the marginal effects computed at the mean, while columns (2), (4), (6) and (8) report the respective standard errors robust to heteroskedasticity and computed using the delta method. The baseline scenarios for the regressions presented are estimated using a value for the correlation of the unobserved variable of 0.25 ($\rho = 0.25$) and a standard deviation of 1 ($\sigma = 1$).

The results in Table 2 indicate that the decision to migrate slightly increases with age. In addition, individuals with at most compulsory education are less likely to migrate than individuals with intermediate levels of education, while individuals with at least tertiary education are more likely

to migrate than individuals with intermediate levels of education. Both married and singles are less likely to migrate than the reference group (i.e. widowed or divorced). Having children reduces the probability to migrate. Individuals who are either working full-time or self-employed are less likely to migrate than individuals with another working status.

Regarding the location decision, older immigrants are more likely to join an economically free region; furthermore, immigrants with at least tertiary education are less likely to sort themselves in an economically free region than immigrants with either low or intermediate levels of education. Singles are less likely to join an economically free region than immigrants with another marital status and immigrants with children are less likely to join an economically free country than immigrants without children. Immigrants that work full-time are more likely to join economically free economies than immigrants working part-time, self-employed or in the reference group (i.e. students, housekeepers, retired, unemployed). Finally, both the difference in trustworthiness and the social interactions term have a significant and sizeable impact on the location decision, indicating that both the difference in trustworthiness between host region and area of origin and average autonomy are higher in places that are economically free than in places that are not economically free.

Immigrants are more likely to be autonomous in a place that is not economically free (columns (5) and (6)) if they have university or higher education and they experience higher autonomy in places where average education is lower. In places that are not economically free female immigrants are less likely to be autonomous than males and immigrants with children are less likely to be autonomous than immigrants with no children. Also, immigrants who work full-time or are self-employed are more likely to be autonomous than immigrants in the reference category (i.e. retired, students, housekeepers or unemployed) or working part-time. Finally, while the difference in trustworthiness levels does not significantly affect the behavioral decision, the social interactions term plays a significant and positive role:

Table 2: Immigrants and Social Interactions: Economic Freedom

Panel A: Regression Results								
Dependent Variable	Migration Decision		Location Decision		Behavioral Decision (L-type regions)		Behavioral Decision (H-type regions)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
age	0.00***	(0.000)	0.03***	(0.006)	0.00	(0.007)	0.00	(0.000)
age2	-0.00***	(0.000)	-0.00***	(0.000)	-0.00	(0.000)	0.00	(0.000)
eduL	-0.03***	(0.002)	-0.00	(0.043)	-0.09	(0.061)	-0.11***	(0.043)
eduH	0.02***	(0.002)	-0.10***	(0.033)	0.07*	(0.040)	0.11***	(0.040)
educavg			0.09	(0.088)	-0.32***	(0.102)	-0.20*	(0.103)
female	-0.00	(0.002)	-0.02	(0.029)	-0.13***	(0.036)	0.00	(0.032)
married	-0.01***	(0.002)	-0.03	(0.024)	-0.02	(0.047)	0.04	(0.039)
single	-0.03***	(0.004)	-0.23***	(0.068)	0.04	(0.093)	0.01	(0.070)
child	-0.01***	(0.002)	-0.26***	(0.047)	-0.17**	(0.070)	-0.05	(0.043)
ft	-0.00**	(0.002)	0.06*	(0.034)	0.14***	(0.042)	0.16***	(0.038)
pt	-0.00	(0.003)	0.04	(0.055)	0.08	(0.075)	0.12**	(0.059)
Self-empl	-0.02***	(0.004)	-0.03	(0.072)	0.19**	(0.089)	0.18**	(0.078)
dtr			0.65***	(0.137)	-0.10	(0.176)	-0.26*	(0.149)
afavg			2.14***	(0.090)	0.74***	(0.115)	1.49***	(0.107)
$\sigma_{ud} = 1; \rho = 0.25$								
observations				42,682				
log-pseudol				-13,758.00				
Panel B: Sensitivity Analysis								
$\sigma_{ud} = 1; \rho = 0.3$	dtr		0.65***	(0.137)	-0.10	(0.175)	-0.26	(0.150)
	afavg		2.07***	(0.089)	0.67***	(0.115)	1.43***	(0.109)
$\sigma_{ud} = 1; \rho = 0.2$	dtr		0.65***	(0.138)	-0.10	(0.176)	-0.26	(0.149)
	afavg		2.21***	(0.090)	0.82***	(0.115)	1.54***	(0.107)
$\sigma_{ud} = 0.5; \rho = 0.25$	dtr		0.56***	(0.121)	-0.13	(0.153)	-0.28*	(0.148)
	afavg		1.98***	(0.079)	0.58***	(0.097)	1.41***	(0.124)
$\sigma_{ud} = 0; \rho = 0.25$	dtr		0.51***	(0.110)	-0.15	(0.144)	-0.26*	(0.136)
	afavg		1.95***	(0.075)	0.62***	(0.090)	1.37***	(0.122)

Notes: Estimation Method: Sequential Logit. Columns (1), (3), (5) and (7) report the marginal effects at the mean for respectively migration decision, immigrants' location decision, their behavioral decision in L-type economies and their behavioral decision in H-type economies; columns (2), (4), (6) and (8) report the standard errors (in parenthesis) for the respective choices. Standard errors are obtained using the Delta Method and are robust to heteroskedasticity. *** Significant at the 1% level, ** Significant at the 5% level, * Significant at the 10% level.

Source: World Values Survey, years 1994-1998.

immigrants' decision to be autonomous is significantly and positively influenced by their expectations about the average level of individual freedom in a region.

Immigrants in an economically free region (columns (7) and (8)) with at most compulsory education are less likely to be autonomous than immigrants with intermediate levels of education, while immigrants with at least tertiary education are more likely to enjoy higher levels of individ-

ual freedom. They are also more likely to be autonomous in regions with lower average levels of education. Furthermore, immigrants working full-time, part-time or self-employed are more likely to be autonomous than immigrants in the reference group. Finally, while the difference in trustworthiness between host region and area of origin is negative and significant at the 10 percent for the behavioral decision, the social interactions term has a positive, significant and large impact on the behavioral decision. This implies that immigrants, when deciding whether they feel to be autonomous or not, are largely influenced by their expectations about the average level of individual freedom of other individuals living in the region they join.

4.2.2 Sensitivity Analysis

Table 2 (Panel B) reports the results for the sensitivity analysis on the regression results presented in Panel A. As it is possible to notice, the results are qualitatively invariant disregarding the type of assumption changed (i.e. whether distributional assumptions or correlation assumption of the unobservables are changed).⁴ Finally, although the estimated effects may slightly differ in size, this is justified by the fact that changing either correlation of the unobservables with the variable of interest or its distributional assumptions may vary the impact that both the difference in trustworthiness and the social interactions term may have on the behavioral decision: different degrees of correlation between characteristics proper of the economy or of the individual not included among the regressors and the variable of interest may lead to slightly different effects of both the social interactions terms and the difference in trustworthiness on the decision of immigrants to be au-

⁴The only exception is the parameter estimated for the difference in trustworthiness between host country and the area of origin, which loses its significance when we vary the correlation assumption. Although the results are similar (in the baseline scenario it was significant only at a 10 percent level and this significance is maintained when varying scenarios for the distributional assumption) we may think that such lost significance may be due to the presence of other features such as nonlinear effects between the unobservables correlated with the social interactions term and the term itself.

tonomous or not. However, these effects do not significantly differ in terms of quality, significance and direction of causality, so we may conclude that the results are robust to changes in both distributional assumptions of unobservables and changes in correlation assumptions between unobservables and the variable of interest.

4.3 Political Freedom

4.3.1 Empirical Results

Table 3 (Panel A) shows the results obtained when individuals should decide between migrating to a country defined as politically free or to a country that is not fully politically free as defined in the data section.

Columns (1) and (2), reporting the individuals' migration decision, show that migration slightly increases with age at a constant rate; also, individuals with at most a compulsory education level are less likely to migrate than individuals with intermediate levels of education, while individuals with tertiary education or higher are more likely to migrate than individuals with intermediate education level. Both married and singles are less likely to migrate than individuals belonging to the reference group (i.e. divorced, widowed, retired and housekeepers). Furthermore, individuals with children are less likely to migrate than individuals without children. Individuals who either are self-employed or have a full-time job are less likely to migrate than individuals with another working status.

Regarding the location decision (columns (3) and (4)), representing the probability for a person that decides to migrate to join a region in a fully politically free country, older immigrants are more likely to sort themselves in a politically free country than younger immigrants. Immigrants with tertiary education are less likely to join a politically free country than immigrants with at most either intermediate or compulsory education. Singles are less likely than married or immigrants with another marital status to sort in a fully politically free country; immigrants with children are less

Table 3: Immigrants and Social Interactions: Political Freedom

Panel A: Regression Results								
Dependent Variable	Migration Decision		Location Decision		Behavioral Decision (L-type regions)		Behavioral Decision (H-type regions)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
age	0.00***	(0.000)	0.03***	(0.006)	0.01	(0.007)	-0.00	(0.006)
age2	-0.00***	(0.000)	-0.00***	(0.000)	-0.00	(0.000)	0.00	(0.000)
eduL	-0.03***	(0.002)	0.01	(0.043)	-0.07	(0.064)	-0.11***	(0.044)
eduH	0.02***	(0.002)	-0.09***	(0.032)	0.10**	(0.042)	0.08**	(0.038)
educavg			-0.01	(0.091)	-0.03	(0.092)	-0.32**	(0.105)
female	-0.00	(0.002)	-0.00	(0.029)	-0.13***	(0.038)	-0.00	(0.032)
married	-0.01***	(0.002)	-0.02	(0.037)	-0.00	(0.049)	0.04	(0.039)
single	-0.03***	(0.004)	-0.15**	(0.068)	0.09	(0.097)	0.02	(0.069)
child	-0.01***	(0.003)	-0.24***	(0.046)	-0.19***	(0.072)	-0.04	(0.043)
ft	-0.00**	(0.002)	0.07**	(0.034)	0.11**	(0.044)	0.19***	(0.038)
pt	-0.00	(0.003)	0.04	(0.056)	0.09	(0.079)	0.11*	(0.058)
Self-empl	-0.02***	(0.004)	-0.04	(0.075)	0.16*	(0.093)	0.20***	(0.078)
dtr			0.29**	(0.140)	-0.30	(0.184)	-0.15	(0.146)
afavg			2.12***	(0.092)	0.73***	(0.118)	1.39***	(0.108)
$\sigma_{ud} = 1; \rho = 0.25$								
observations				43,654				
log-pseudol				-13,915.02				
Panel B: Sensitivity Analysis								
$\sigma_{ud} = 1; \rho = 0.3$	dtr		0.28**	(0.139)	-0.30	(0.183)	-0.15	(0.147)
	afavg		2.05***	(0.092)	0.66***	(0.118)	1.32***	(0.109)
$\sigma_{ud} = 1; \rho = 0.2$	dtr		0.29**	(0.140)	-0.30	(0.184)	-0.15	(0.146)
	afavg		2.20***	(0.093)	0.80***	(0.118)	1.45***	(0.107)
$\sigma_{ud} = 0.5; \rho = 0.25$	dtr		0.22*	(0.115)	-0.29	(0.162)	-0.14	(0.140)
	afavg		1.83***	(0.078)	0.57***	(0.101)	1.27***	(0.118)
$\sigma_{ud} = 0; \rho = 0.25$	dtr		0.19**	(0.103)	-0.28*	(0.153)	-0.13	(0.127)
	afavg		1.77***	(0.073)	0.61***	(0.094)	1.23***	(0.115)

Notes: Estimation Method: Sequential Logit. Columns (1), (3), (5) and (7) report the marginal effects at the mean for respectively migration decision, immigrants' location decision, their behavioral decision in L-type economies and their behavioral decision in H-type economies; columns (2), (4), (6) and (8) report the standard errors (in parenthesis) for the respective choices. Standard errors are obtained using the Delta Method and are robust to heteroskedasticity. *** Significant at the 1% level, ** Significant at the 5% level, * Significant at the 10% level.

Source: World Values Survey, years 1994-1998.

likely to join a fully politically free country than immigrants with no children: these last results indicate probably that singles are more willing to join critical regions than e.g. married and that some immigrants with children are probably those who migrate for their situation (e.g. refugees) who have as priority leaving their country disregarding whether the final destination region is a country enjoying full political freedom or not. Full-time workers are more likely than other types of workers to migrate to fully po-

litically free regions. Finally, both difference in trustworthiness between host region and area of origin and average levels of individual freedom are higher in economies that have full political freedom.

Immigrants that live in a place that is not fully politically free (columns (5) and (6)) are more autonomous if they have tertiary or higher education. Females are less likely to be autonomous than males, immigrants with children are less autonomous than immigrants who have no children. Besides, full-time workers are more likely to be autonomous than workers working part-time or workers in the reference group (i.e. retired, students, housekeepers), the same can be said for self-employed, although this effect is significant only at the 10 percent level. Finally, while the difference in trustworthiness between host region and area of origin does not significantly impact autonomy of immigrants, the social interactions term (i.e. the perceived average level of individual freedom in a region) has a significant, positive and large impact on it.

Immigrants who join a politically free region (columns (7) and (8)) with only compulsory education are less likely to be autonomous than immigrants with intermediate levels of education, while immigrants with tertiary or higher education are more likely to be autonomous than immigrants with intermediate levels of education. Immigrants are significantly more likely to be autonomous if they live in regions with lower levels of education. Immigrants with a job (disregarding whether full-time, part-time or self-employed) are more likely to be autonomous than individuals in the reference category and the effect is strongly significant for both full-time workers and self-employed, while working part-time is significant only at a 10 percent level. The difference in trustworthiness between host region and area of origin is not significant, indicating that this variable is not a determinant of individual autonomy in countries that are politically free (or also the possible presence of nonlinear effects e.g. between immigrants coming from different areas of the world); instead, the social interactions term is strongly significant and very sizeable, indicating that the higher the

average level of individual freedom in a region, the more likely immigrants are to perceive they are autonomous.

4.3.2 Sensitivity Analysis

Table 3 (Panel B) reports the results for the sensitivity analysis. Although the estimated marginal effects slightly vary in term of size (probably due to the fact that both the difference in trustworthiness and the average level of autonomy are strictly associated to factors such as e.g. the average level of trustworthiness in a region, the individual willingness to pay for public goods and other individual characteristics, that are likely to be part of the unobservables), their impact do not vary in terms of significance⁵ and direction of causality so we may say that the results are not significantly different from the baseline results and this is true for each simulated scenario, disregarding the type of simulation (i.e. whether we change distributional assumptions or correlation assumptions). Thus, we may conclude that the results are not sensitive to changing assumptions on unobservables.

5 Beliefs in a Just World: Explaining Autonomy in the United States and Europe

Table 4 contains the countries and regional averages for the two cultural endowments of interest in the analysis, that is, trust and individual freedom in Europe (Panel A) and the United States (Panel B). Since, as we have mentioned before, these two variables can be considered as measures for, respectively, collective and individual cultural capital, we can think of them being representative of the cultural endowment of an economy.

As it is possible to notice in Table 4.A, Finland and Germany, countries

⁵The only term that is significantly different is the difference in trustworthiness for the location decision that, when assuming zero variance for the unobservables, becomes significant at the 10 percent level.

Table 4: Cultural Endowment by Region and Country

Countries, regions and Average Levels of Culture								
Country/region	AF	Trust	Country/region	AF	Trust	Country/region	AF	Trust
Panel A: Europe								
Finland			Bremen	0.8571	0.3571	Aragon	0.4054	0.5676
Pohjois-Karjala	0.8889	0.4722	Nordrein-Westfalen	0.8123	0.4050	Asturias	0.4706	0.2647
Keski-Suomi	0.8750	0.4167	Hessen	0.8090	0.4235	Baleares	0.2174	0.0000
Uudenmaan	0.9177	0.4821	Rheinland-Pfalz	0.7833	0.4286	Canarias	0.5759	0.3065
Turun Ja Porin	0.8276	0.5119	Baden-Wurttemberg	0.7938	0.4777	Cantabria	0.7451	0.1429
Haffneen	0.9085	0.4437	Bayern	0.8035	0.3602	Castilla-LaMancha	0.7013	0.3562
Kymen	0.9153	0.4068	Saarland	0.8333	0.6471	Castilla-Leon	0.6875	0.2667
Mikkelin	0.9444	0.4286	Brandenburg	0.6590	0.1667	Cataluna	0.6739	0.3409
Kuopion	0.9074	0.4314	Mecklenburg-Vorpor	0.6033	0.2562	Comunidad Valenciana	0.6557	0.3590
Vaasan	0.9107	0.7321	Sachsen	0.6757	0.2847	Extremadura	0.3939	0.2727
Oulun	0.8529	0.5347	Sachsen-Anhalt	0.7278	0.1768	Galicia	0.6744	0.2561
Lapin	0.9592	0.9694	Thuringen	0.6235	0.2609	Madrid	0.6125	0.3337
Germany			West-Berlin	0.9153	0.5294	Murcia	0.4242	0.0969
Scleswig-Holstein	0.8536	0.3500	Ost-Berlin	0.7273	0.4024	Navarra	1.0000	0.5625
Hamburg	0.8333	0.4815	Spain			Pais Vasco	0.5938	0.2295
Niedersachen	0.7692	0.3824	Andalucia	0.6028	0.2732	Rioja	0.5000	0.2857
Panel B: United States								
New England	0.8475	0.3391	West South Central	0.8650	0.4250	Northwest	0.9153	0.5263
Middle Atlantic States	0.8104	0.3712	East North Central	0.7980	0.3981	California	0.8077	0.3553
South Atlantic	0.7966	0.2500	West North Central	0.8804	0.3222			
East South Central	0.7625	0.2692	Rocky Mountain State	0.8250	0.2821			
Europe	0.7358***	0.3595	USA	0.8197***	0.3594			
	[-6.587]	[0.008]						
	(0.000)	(0.9935)						
Kruskal-Wallis test	$\chi_{54_{af}}^{2+} = 248.618$	$\chi_{54_{af}}^{2+} = 191.290$						
	(0.000)	(0.000)						

Notes: Regional cultural coverages are reported. [] report the statistics for the Wilcoxon Mann Whitney two-sample test to test cultural statistical difference across United States and Europe and for the Kruskal-Wallis (KW) test to test for joint cultural statistical differences among regions of the sample. p-values are in (). *** Significant at the 1% level, ** Significant at the 5% level, * Significant at the 10% level.

Source: World Values Survey, years 1994-1998.

generally endowed with higher trustworthiness, show indeed higher levels of trust. Instead, Spain has lower overall values for both trust and autonomy. This evidence suggests that countries with better economic performance are also those with higher cultural endowment, supporting the theory and findings of the cultural economics literature (e.g. Tabellini, 2010). When we look at the within-country cultural differences, we can notice that, overall, the results are in line with the cross-country findings: The higher the stage of development of a region, the higher is its cultural endowment. A similar result is obtained when looking at regional differences across the United States (Panel B).

Comparing the results in Panel A and B of Table 4 we can notice that overall the average autonomy of individuals is higher in countries with better economic performance (i.e. Finland, Germany and the United States) and much lower in Spain. The same can be said about trust. In order to formally test such differences we report a two-sample Wilcoxon Mann-Whitney test for both autonomy and trust, which suggest that, overall, the two averages for autonomy are statistically significantly different across Europe and the United States. This is not the case for the two averages on trust. However, the Kruskal-Wallis test is in favor of joint statistical significant differences across all the averages of the sample for both types of cultural capital. These results can be interpreted as the findings in Table 1, so once again we notice that cultural endowments and economic development are positively correlated. Thus, to investigate this further we estimate a sequential logit model. Unfortunately, lack of variability in the data does not allow estimating the specification of the model that contains a dummy for self-employed using actual data; thus, we simulate a data set with the same individual and regional characteristics of the actual data but with an enlarged number of observations. The estimation results are presented in Table 5 (Panel A). The methodology used in Table 5 is very similar to the ones used in previous regressions; however, the behavioral decision for immigrants in the United States may be subject to identification problems

Table 5: Immigrants and Social Interactions: Europe and the United States

Panel A: Regression Results								
Dependent Variable	Migration Decision		Location Decision		Behavioral Decision (US regions)		Behavioral Decision (EU regions)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
age	-0.00	(0.000)	-0.02	(0.000)	0.02**	(0.008)	-0.04***	(0.008)
age2	-0.00***	(0.000)	-0.00	(0.000)	-0.00***	(0.000)	0.00***	(0.000)
eduL	-0.01***	(0.002)	-0.00	(0.000)	-0.12**	(0.059)	-0.35***	(0.058)
eduH	0.05***	(0.002)	0.00	(0.002)	0.51***	(0.145)	-0.12***	(0.045)
educavg			-0.09*	(0.058)	-0.81***	(0.225)	-1.06***	(0.145)
female	-0.00	(0.001)	-0.00	(0.001)	-0.14***	(0.050)	0.21***	(0.038)
married	0.00**	(0.001)	-0.00	(0.002)	0.03	(0.055)	-0.06	(0.055)
single	0.00**	(0.002)	-0.00	(0.003)	-0.14*	(0.076)	-0.13	(0.067)
child	0.00	(0.001)	-0.00	(0.000)	0.01	(0.040)	-0.02	(0.046)
ft	0.00**	(0.001)	0.00*	(0.001)	0.16***	(0.051)	-0.00	(0.044)
pt	0.00	(0.002)	0.01	(0.005)	-0.01	(0.068)	0.04	(0.054)
Self-empl	0.00	(0.003)	0.00	(0.002)	0.36***	(0.140)	-0.07	(0.087)
dtr			0.08	(0.051)	0.67*	(0.383)	0.73***	(0.211)
afavg			-0.11	(0.068)	0.83***(ϵ)	(0.288)	0.73***(ϵ)	(0.181)
$\sigma_{ud} = 1; \rho = 0.25$					48,027			
observations								
log-psudol					-8,715.71			
Panel B: Sensitivity Analysis - Europe and the United States								
$\sigma_{ud} = 1; \rho = 0.2$	dtr		0.08	(0.052)	0.67*	(0.385)	0.74***	(0.213)
	afavg		-0.11	(0.068)	0.92***(ϵ)	(0.302)	0.80***(ϵ)	(0.184)
$\sigma_{ud} = 1; \rho = 0.3$	dtr		0.08	(0.051)	0.66*	(0.381)	0.72***	(0.208)
	afavg		-0.11	(0.068)	0.75***(ϵ)	(0.274)	0.65***(ϵ)	(0.178)
$\sigma_{ud} = 0.5; \rho = 0.25$	dtr		0.06*	(0.038)	0.45	(0.302)	0.47***	(0.143)
	afavg		-0.09*	(0.050)	0.77***(ϵ)	(0.264)	0.59***(ϵ)	(0.126)
$\sigma_{ud} = 0; \rho = 0.25$	dtr		0.06*	(0.035)	0.39	(0.271)	0.39***	(0.123)
	afavg		-0.8*	(0.045)	0.84***(ϵ)	(0.275)	0.62***(ϵ)	(0.111)

Notes: Estimation Method: Sequential Logit. Columns (1), (3), (5) and (7) report the marginal effects at the mean for respectively immigrants' location decision, their behavioral decision in US regions and their behavioral decision in European regions; columns (2), (4), (6) and (8) report the standard errors (in parenthesis) for the respective choices. Standard errors are obtained using the Delta Method and are robust to heteroskedasticity. *** Significant at the 1% level, ** Significant at the 5% level, * Significant at the 10% level. (ϵ) indicates that the coefficients for the social interactions terms in the behavioral decisions in Europe and in the United States are constrained to be equal.

Source: World Values Survey, years 1994-1998 and author's calculations.

given the small number of regions in the United States and the results could be biased and inconsistent due to the low variability of the average level of individual freedom in a region (*afavg*). Thus, this section differs from the analysis presented in the previous section in that we constrain the coefficients for the two behavioral decisions to be equal (i.e. $\beta_{123} = \beta_{124}$). We report the results in Table 5.

The results, with the exception of the marginal effects at the mean for

the two behavioral decisions, are very similar to the results obtained in the previous part of the analysis, so we do not provide a full description of the findings. Also, although we imposed a restriction on the two coefficients for the social interactions terms to be equal, in Table 5 we present the average partial effects computed at the means, so the estimated impacts differ.

The results show that once again the social interactions terms play a significant, sizeable and positive role in the determination of individual freedom of immigrants living either in the United States or in Europe. With regards to the other variables, most of them have a similar impact on the two behavioral decisions in the United States and Europe. However, while immigrants with higher education sorting in a US region are more likely to be autonomous than individuals with intermediate levels of education, the same group of immigrants living in a European region is less likely to be autonomous than immigrants with intermediate levels of education. Also, while self-employed are more likely to be autonomous than the reference group in the US, immigrants who are self-employed and live in Europe are not significantly more autonomous than immigrants in the reference group and if any effect should exist it would be negative. Although the lack of significance of the estimated parameter could be due to the small percentage of self-employed in the sample, this result is in line with the results of the findings in the previous section and deserves further attention.

5.0.3 Sensitivity Analysis

Once again, we perform a sensitivity analysis (reported in Table 5, Panel B) as we did for the previous results. The results show that in the location decision both the social interactions terms and the marginal effect at the means of the difference in trustworthiness levels are significant at the 10 percent level in the last two scenarios (changes in distributional assumptions), but they are not significant in the first two (changes in correlation assumptions). Also, they become insignificant when we change distribu-

tional assumptions in the behavioral decisions of immigrants in the United States. These results can be interpreted as in Table 3. With respect to the behavioral decision, the results for the difference in trustworthiness of immigrants in the United States are significant at the 10 percent level for the first two scenarios, while the results for the social interactions term remain unchanged in terms of significance for the immigrants in both the United States and Europe. Overall, the results are consistent with a high and significant impact of both components of culture and, especially for the social interactions term, they are always sizeable, highly significant and robust to sensitivity checks.

6 Discussion and Conclusions

In this paper we have analyzed the impact of culture, through a social interactions model, on individual autonomy of immigrants sorting either (a) in economically free versus not economically free economies or (b) in economies that are classified as fully politically free versus not fully politically free or (c) in Europe or the United States.

The results show that, overall, immigrants are very influenced by their expectations about the average level of individual freedom present in the region that hosts them. This is a very important result because it indicates that immigrants joining “virtuous” regions, where individuals have high levels of autonomy and consequently higher aggregate levels of self-esteem and productivity, are more likely to imitate this virtuous behavior; instead, immigrants joining less virtuous regions are more likely to adapt to this average behavior and this may lead to persistent differences in productivity between virtuous and less virtuous regions.

The results also indicate that the difference in trustworthiness has an impact on immigrants’ decisions in all the estimation results, but it may sometimes be not significant.

Furthermore, the results also indicate that some crucial individual char-

acteristics have a different impact across different samples. Indeed, females are likely to be significantly less autonomous than males in countries that are either not economically free or not fully politically free. Also, immigrants with higher education levels are more likely to be more autonomous than immigrants with intermediate levels of education in countries that are economically free (this is true also for countries that are not economically free, but the estimated parameter is significant only at the 10 percent). A similar result emerges for immigrants sorting in the US or Europe. Indeed, comparing the behavioral choice in Europe and in the United States, immigrants with university or higher education experience higher autonomy levels than individuals with lower levels of education in the United States; however, they are significantly less autonomous than individuals with secondary education in Europe. This could suggest a lower capacity of the European labor market to absorb highly skilled workers compared to the US market. Finally, immigrants that are self-employed are more likely to be significantly more free in countries with better political status (i.e. countries that are fully politically free). This is true also for immigrants sorting in the US or Europe: Self-employed are not likely to be more autonomous than the reference group in Europe but this is not the case in the United States, where self-employed are significantly more likely to be autonomous than the reference group: this result may indicate that entrepreneurs are more likely to be free to act in the United States than in Europe. This is a very important result because, as already remarked by the previous literature (e.g. Beugelsdijk and Noorderhaven, 2004; Beugelsdijk, 2007), entrepreneurship has a positive and significant impact on economic productivity and growth. It also suggests that entrepreneurship may be linked to institutional and economical efficiency and that immigrants are better off in countries that enjoy higher freedom, suggesting also a link between subjective measures of individual freedom and objective measures of political and economic freedoms.

Both these results together suggest that behavioral cultural decisions

may depend upon institutional quality and that culture and institutions may influence each other and have an impact on the formation of individual beliefs and decisions.

Our findings are robust to a sensitivity analysis.

In sum, all in all, the findings of this paper indicate that individuals are very influenced by (expectations about) the overall culture of the region they join in the formation of their own individual beliefs and decisions. Also, countries with better institutional environments seem to be more able to welcome immigrants, while some categories of immigrants may be worse off in countries and regions with worse institutions. These results deserve further investigation, which is left for future work.

Finally, expectations turn out to be very important in the determination of individual beliefs and decisions. Thus, being the model an observational learning model, changes in expectations or in individual or contextual effects may lead to substantial socioeconomic changes.

A Appendix

Variable	Definition	Source
age	age of respondent (r henceforth)	World Values Survey (WVS)
age2	age of r squared	WVS
female	dummy variable taking value 1 if r is female, 0 otherwise	WVS
eduL	dummy variable taking value 1 if r has lower (i.e. -inadequately- completed elementary education) levels of education, 0 otherwise	WVS
eduH	dummy variable taking value 1 if r has higher education levels or more, 0 otherwise	WVS
educavg	regional average education	WVS
married	dummy variable taking value 1 if r is married, 0 otherwise	WVS
single	dummy variable taking value 1 if r is single, 0 otherwise	WVS
ft	dummy variable taking value 1 if r works full-time, 0 otherwise	WVS
pt	dummy variable taking value 1 if r works part-time, 0 otherwise	WVS
Self-empl	dummy variable taking value 1 if r is self-employed, 0 otherwise	WVS
dtr	difference in trustworthiness between host region and home area computed as average trust of the host region less the average trust of immigrants coming from the same home area	WVS
afavg	regional average trust of all the r living in a region	WVS

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