Civicness drain*

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Abstract

Migration may cause not only a brain drain but also a civicness drain, leading to an uncivicness trap. We study this possibility in a model in which Civic and Uncivic types balance hope vs. fear of migration outcomes, taking into account economic gains, risk attitudes, and their beliefs about being considered Civic in the place of destination. We then test the predictions of the model using migration choices of southern-Italian high-school graduates classified as Civic if not cheating in a die-roll experiment. Local civicness is the fraction of Civic in their high-school class. In line with our theory, the stark civicness drain observed at high and low local civicness is attenuated at intermediate values of this variable, where in fact an uncivicness drain is observed.

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1 Introduction

Imagine a city inhabited by two types of citizens: the Civic, who always pay taxes independently of what the others do, and the Uncivic, who instead pay taxes if and only if the expected penalty for not doing it is high enough. If the fraction of Uncivic is large and they free-ride, then the Civic may decide to migrate elsewhere. At the same time, also the Uncivic may consider migrating depending on how many Civic can be free-rided. For both types, the decision to migrate hinges on the composition of types in the place of origin vs. the place of destination, on their risk attitudes and on their beliefs about what will happen in the place of destination, where detection of uncivic behavior may be more effective and where immigrants believed to be Uncivic (independently of what they really are) may not be well accepted.

The goal of this paper is to study the interaction between civicness and migration decisions and the extent to which this interaction may cause a civicness drain in the place of origin. We are motivated by the extensive evidence suggesting the existence of a persistent gap in social capital *between* the North and the South of Italy[1] together with a substantial variability across local areas *within* the two macro-regions (the South in particular).[2]

The general hypothesis that we investigate is that initial differences in the degree of local civicness may induce a civicness drain in some places of the South and not in others. We describe the conditions under which this hypothesis holds by developing a "Mandatory Public Good" model of two regions – South and North – in which civic preferences are more prevalent in the North and in which the belief of southern players to be considered Civic in the North depends on the degree of local civicness in their locality of origin. This model predicts that, abstracting from risk attitudes and beliefs, the general trend would be a civicness drain from the South to the North due to better enforcement of civic behavior

[1] See, for example, Guiso, Sapienza, and Zingales (2004), Durante (2010), Bigoni et al. (2016) or Ichino and Maggi (2000). To define the South and the North, we use, as customary in the literature, the definition of the Italian Institute of Statistics (ISTAT): the North includes Valle d'Aosta, Piemonte, Lombardia, Trentino Alto Adige, Veneto, Friuli Venezia Giulia, Liguria, Toscana, Emilia-Romagna, Umbria, Lazio and Marche. The South instead includes Abruzzo, Molise, Campania, Basilicata, Puglia, Calabria, Sicilia and Sardegna.

[2] Putnam, Leonardi, and Nanetti (1993) are probably the first to explore systematically the variability of social capital indicators within Italian macro-regions. For a more recent exploration see Buonanno et al. (2015).

in the North, which makes migration more attractive for the Civic. The better enforcement in the North is shown to be an equilibrium result when, as observed in our data and in the existing literature, the North is more civic to begin with.

However, if risk attitudes differ between the two types, the general tendency to a civicness drain from the South would be locally attenuated by the interaction between these risk attitudes and the beliefs of southerners about what North thinks of their civicness (independently of the truth). Specifically, an Uncivicness drain may be observed at intermediate levels of local civicness if the Uncivic are more willing than the Civic to take the risk of not being considered Civic in the North. This characteristic (which may or may not hold in specific populations) makes the Uncivic more likely to migrate at those intermediate levels of local civicness at which uncertainty about what North thinks of South is the highest. While we are of course aware that migration flows out of the South were, and still are, mainly driven by economic concerns, our model suggests that, at the margin, civicness may have played a role of which we want to understand the relevance.

To explore empirically the validity of our model predictions in the Italian context, we first selected, in the spring of 2015, 33 senior classes in 11 high-schools of Calabria (a southern Italian region). 671 students in these classes were asked to perform a series of assignments, which included a modified version of the "die roll" task in conjunction with some questions about their competence in calculus of probability.[3] The instructions concerning the "die roll" task indicated that students would have received 10 euro upon reporting a six and zero otherwise. An innovative aspect of our experimental design consisted in informing students that what would have remained of the experimental budget after paying them for their *un-monitored declarations* would have been donated to their school in the form of educational supplies. Students therefore knew that cheating would have subtracted resources from the community. This feature of our design captures aspects of civicness that go beyond mere honesty, such as the willingness to follow an impersonal rule to allocate funds within the community thereby resisting the temptation to take a personal advantage by covertly

[3]The "die roll" task has been used, for example, by Fischbacher and Foellmi-Heusi (2013), Abeler, Nosenzo, and Raymond (2018), Cohn and Marechal (2018), Dai, Galeotti, and Villeval (2016) and Gachter and Schulz (2016). The latter two papers show, respectively, that cheating in the die-roll task is a good predictor of free-riding on public transportation and of country level indicators of corruption, tax evasion and fraudulent politics.

breaking the rule at the expenses of others. The same experiment was then replicated during 2016 in Emilia-Romagna (a northern Italian region), where 394 students of 23 senior classes in 13 high-schools participated in the study.

This setup delivers a deterministic measure of individual civicness for those reporting 1 through 5 (the "Civic" hereafter), while the measure is noisy for those reporting 6 (the "Uncivic" hereafter) because they may have been "lucky civic" or "truly uncivic".[4] Moreover, the experiment allows us to measure the average fraction of Civic students in each high-school class, which constitutes the measure of "local civicness" on which we focus our attention. Considering a population of students has an important advantage for our analysis: their school classmates can arguably be considered as one of the most relevant local communities with which they interact and for which an aggregate measure of civicness can be constructed with our experiment.

As in other studies, also our evidence indicates that the fraction of Civic students is considerably lower in Calabria (49%) than in Emilia Romagna (71%), which constitutes our *Finding 1*.[5] Note that this finding supports the assumption made in our theoretical model about the North-South gap. There is however a substantial overlap, which is also predicted as a possibility by the model, between the supports of the two distributions, with significantly higher variability across classes in the South: while in Calabria local civicness ranges between 6% and 82%, in Emilia-Romagna it goes from 52% to 93% (*Finding 2*). Since in our experiment there is no detection of cheating and no enforcement of any sanctioning, we treat this evidence as indicative of the distribution of the true propensity of subjects to be Civic in the different localities. The relatively novel aspect of these first two findings with respect to the existing literature is the emphasis on civic duties rather than on voluntary contributions such as blood donations or engagement in the public sphere.

We then proceed to explore other more novel aspects of the South-North gap that, as suggested by our theoretical model, are potentially relevant for the existence of a civicness drain. Adapting to our setting the so called "lost wallet question",[6] we are able to elicit

[4] One may use the Law of Large Numbers to infer how many, of those reporting a six, can be expected to be "truly uncivic", and we come back to this possibility in Section 4.1.1.

[5] Differences in trust and social capital have already been widely documented for the North and the South of Italy (see, for example, the literatute cited in footnotes 1 and 2).

[6] See, for example, Sapienza, Toldra-Simats, and Zingales (2013) and Knack (2001). This question refers

second order beliefs of the students in Calabria about what North thinks of southern civicness. Our *Finding 3* is that these beliefs are positively correlated with local civicness (i.e. civicness in the class), again as assumed in the model.

The opportunity to link this information on civicness, on related beliefs and on risk attitudes with information on migration decisions was offered by a follow-up interview, during the fall after graduation, in which students were asked about their college choices and more generally about whether they had decided to stay in Calabria or go elsewhere. Leaving Calabria to go to North was the choice of 32% of the interviewed students, in line with national statistics which also say that, in the majority of cases, this choice turns into a long term decision.[7] We were thus able to connect the migration decision of each student to her own civicness and to the average civicness of her high-school class, together with a large set of other indicators related to demographic characteristics, skills, time preferences and family affluence that were generated by other parts of the data collection effort. It is also important to note that our design allows us to study a population (senior high-school students) who is at the first chance of deciding to migrate: for this reason, our evidence speaks about how initial conditions of local civicness may shape migration decisions.

We find strong evidence of a civicness drain at high and low values of local civicness. The model predicts that when this happens and subjects are not all risk neutral, the Civic should also be less likely to emigrate at intermediate values of local civicness than at the extremes, and the opposite should hold for the Uncivic. In line with these predictions, we find a U-shaped profile of the probability of migration as a function of local civicness for the Civic and a Hump-shaped profile for the Uncivic. We also show that these profiles intersect, generating an uncivicness drain in the middle of the distribution. These combination of results is summarized in our *Finding 4*.

Finally, our theory also predicts that an uncivicness drain in the middle of the distribution can only be observed if the Uncivic are more risk seeking than the Civic. To test this prediction, we elicited risk attitudes, albeit in a non-incentivised way, finding statistically significant evidence that (self-reported) risk seeking among the Uncivic stochastically

to the hypothetical situation of losing a wallet and to the probability with which it would be returned. Cohn, Marechal, and Zund (2018) did actually run a field experiment checking how often lost wallets are returned.

[7] See Istat (2015a).

dominates risk seeking among the Civic, which is our fifth and last finding.

The novelty and main contribution of our analysis is to make a first step towards connecting two strands of literature: the one on social capital, with specific reference to the South of Italy,[8] and the one on migration decisions.[9] It is just a first step because a dynamic general equilibrium analysis of the patterns that we uncover is clearly necessary to understand the extent to which these mechanisms may have shaped, in the long run, the current distribution of civicness across different areas of the South of Italy. Such current heterogeneity may be, at least partly, the outcome of the heterogeneous mix of Civic and Uncivic migrants previously leaving each area, a mix that in turn may have been driven by initial differences in the distribution of local civicness.[10]

In Section 2 we present our theory and its predictions. We then describe our experiment and the data in Section 3. The evidence is presented in Section 4, while Section 5 concludes.

2 A model of civicness and migration

Consider a country with two regions, South and North, denoted by $r = \{S, N\}$. In each region there are J localities of identical size, with the population at each locality represented by a continuum of individuals with a unit measure. A player i living in locality j of region r belongs to one of two types: the Civic (denoted by $\tau = c$), whose fraction in locality j of region r is $p_j^r \in [0, 1]$) and the Uncivic (denoted by $\tau = u$), whose fraction, in the same locality, is $1 - p_j^r$. Therefore, p_j^r is the degree of local civicness of locality j of region r and $\bar{p}^r \equiv \mathbb{E}_j[p_j^r]$ denotes the average degree of local civicness in region r.

2.1 The game in the two regions and the corresponding equilibria

At each locality, a Public Good game is played by the local population. Contribution to the public good is *mandatory:* each player is required to contribute one unit, and the total

[8] See Banfield (1958), Putnam, Leonardi, and Nanetti (1993), Knack and Keefer (1994), Guiso, Sapienza, and Zingales (2004), Buonanno et al. (2015), Ichino and Maggi (2000) and Bigoni et al. (2016).

[9] See Todaro (1970), Harris and Todaro (1970), Borjas (1987, 1989) and Dustman and Gorlach (2014).

[10] See e.g. Karadja and Prawitz (2019) and Barsbai et al. (2017) for evidence on the effect of migration on the political orientation of those remaining in the community of origin.

contributed sum is then multiplied by a productivity coefficient and equally divided among all players in the local community. Thus, the game captures civic duties such as tax payment (rather than voluntary contribution to one's community). The Civic always contribute (because this is what one "ought to do"), while the Uncivic contribute if and only if contributing maximizes their payoff.[11]

The national institutions, which are common to both regions, impose a fine of size ϕ on an individual who is caught shirking, but the enforcement of this sanction is implemented at the regional level. Given that enforcement is costly, it is up to the regional authorities to decide whether or not to use it. Denote by π_j^r the actual fraction of contributors in locality j of region r (possibly greater than p_j^r if some Uncivic types decide to contribute). The per-capita cost of enforcement, which is deducted from the public good of each locality of region r, is $k(\bar{\pi}^r)$, where $\bar{\pi}^r \equiv \mathbb{E}_j[\pi_j^r]$ denotes the average fraction of contributors in region r. The following assumptions characterize the enforcement.

Assumption 1 *$k(\bar{\pi}^r)$ is a strictly decreasing function of $\bar{\pi}^r$ with $k(1) = 0$.*

Assumption 2 *When enforcement is implemented, the probability of getting caught for not contributing is a strictly increasing function of $\bar{\pi}^r$, denoted by $g(\bar{\pi}^r) \in (0, 1)$.*

The authorities are benevolent and implement the enforcement if and only if the (expected) individual payoff after the deduction of its cost is larger than the (expected) individual payoff without implementing it. If there is no enforcement in region r, the material payoffs given π_j^r are $\lambda(\bar{\pi}^r)\pi_j^r - 1$ for a contributor and $\lambda(\bar{\pi}^r)\pi_j^r$ for a non contributor, where $\lambda(\bar{\pi}^r)$ is the productivity coefficient in region r (i.e., it is assumed to be the same in all localities of r).[12] For $\lambda(\bar{\pi}^r)$ the following assumption holds:

[11] Algan, Cahuc, and Sangnier (2017) make the same set of assumptions in their analysis of civicness, uncivicness and the welfare state. In our context, the assumption about Civic behavior could be explicitly modelled by a sufficiently high internal cost of cheating for the Civic. We believe, however, that this would be redundant for our goals in this paper. Our setup presents similarities also with Greif and Tabellini (2012), in which the propensity to contribute to the public good depends on the interaction between one's type (clannish or generalist) and the region in which one lives (clan or city).

[12] Hence, payoffs are determined in our model by region-level productivity, $\lambda(\bar{\pi}^r)$, and local-level contribution, π_j^r, reflecting the casual observation that well-functioning localities in an underdeveloped region tend to be less productive than equally well-functioning localities in a developed region.

Assumption 3 $\lambda'(\bar{\pi}^r) > 0$ *and* $\lambda(0) > 1$.[13]

If instead enforcement is used, the expected material payoffs are $\lambda(\bar{\pi}^r)\pi_j^r - k(\bar{\pi}^r) - 1$ for a contributor and $\lambda(\bar{\pi}^r)\pi_j^r - k(\bar{\pi}^r) - g(\bar{\pi}^r)\phi$ for a non contributor.[14]

Since the Civic always contribute while the Uncivic contribute only if they find it advantageous, the share of contributors π_j^r is determined endogenously in the following manner. If there is no enforcement in region r, the Uncivic in the localities of that region have no incentive to contribute hence it is immediate that $\pi_j^r = p_j^r$ for any j. However, if there is enforcement in region r, an Uncivic will contribute if and only if

$$g(\bar{\pi}^r)\phi > 1. \tag{1}$$

This decision rule captures the strategic complementarity of contribution – the more people in the region are contributing, the more each individual Uncivic is inclined to contribute as well. Note that the same parameter values apply to all localities of a region, hence if an Uncivic individual in some locality of region r strictly prefers to contribute, so do all the other Uncivic individuals in region r.

Thus, a region may potentially be in any one of two pure strategy equilibria: a *good* equilibrium, where all the Uncivic types in all localities of the region contribute, and a *bad* equilibrium, where all the Uncivic types in all localities of the region shirk from contribution.[15] Note that, in the good equilibrium, enforcement is implemented (because it is effective and costs nothing) while in the bad equilibrium it is not implemented (because it is costly and totally ineffective).

Since we are interested in how local civicness shapes migration to North from heterogeneous localities in the South, we assume that the two regions differ not because by chance they are in different equilibria, but because the average degree of local civicness is lower in

[13] The increasing return to scale of the productivity coefficient (i.e. $\lambda(\bar{\pi}^r)$ increasing in its argument) could reflect, for example, the existence of a fixed component in the production process (like infrastructure, administration, etc.). The assumption that $\lambda(\bar{\pi}^r)$ is always greater than 1 implies that, even in a non-efficient region, a dollar contributed to the public good generates a return that is greater than one dollar.

[14] This is because the public good is of size $\lambda(\bar{\pi}^r)\pi_j^r - k(\bar{\pi}^r)$ and the contributors pay the one unit to the public good while the non-contributors face a chance of $g(\bar{\pi}^r)$ to pay a fine of size ϕ.

[15] Potentially there is also a third type of equilibrium that is a mixed one, where the proportion of Uncivic contributing is such that $g(\bar{\pi}^r)\phi$ equals exactly 1. Given that this equilibrium requires a very peculiar mixture of actions and is not dynamically stable we ignore it in our analysis.

the South:[16]

Assumption 4 $\bar{p}^S < \bar{p}^N$.

We further assume that the relationship between ϕ, the fine for shirking from contribution (when enforcement is used), and $g(\cdot)$, the probability of getting caught for doing so (in each region), satisfies the following inequality:

Assumption 5 $g(\bar{p}^S) < \frac{1}{\phi} < g(\bar{p}^N)$.

In light of equation 1, Assumption 5 implies that, in the presence of enforcement, an Uncivic will choose to contribute in the North even if all the other Uncivic subjects shirk from contribution (i.e., when $\bar{\pi}^N = \bar{p}^N$), while in the South this does not hold.

Corollary 1 *If enforcement is used in the North, the only equilibrium is the good one, while if the South uses enforcement, the region may end up in either a bad or a good equilibrium.*

The good equilibrium is not ruled out in the South because if all the Uncivic in this region do contribute, so that $\bar{\pi}^S = 1$, then Assumptions 2 and 5 imply that $\frac{1}{\phi} < g(\bar{p}^N) \leq g(1)$", in which case equation 1 holds. Hence, in the presence of enforcement, an Uncivic will contribute, even in the South, if sufficiently many Uncivic types do so as well. However, while Corollary 1 does not guarantee that the South is in the bad equilibrium, we interpret the North-South gap in Italy as indicative of the equilibrium in the South being bad. Thus, we make the following assumption.

Assumption 6 *The South is in the bad equilibrium.*

The bad equilibrium in the South implies that this region is caught in an *uncivicness trap* - in all localities the Uncivic do not contribute to the public good, so that $\bar{\pi}^S = \bar{p}^S$ and the technological multiplier of public good provision remains stuck at a low level $\lambda(\bar{p}^S)$. As this holds even if enforcement is used, it implies that enforcement is ineffective in the South

[16]This assumption is in line with the existing evidence (see footnotes 1 and 2) and will be confirmed by our results in Section 4.

(actually it reduces welfare due to its cost) and hence it is not used.[17] Thus the payoffs in each southern locality are $\lambda(\bar{p}^S)p_j^S - 1$ for a Civic and $\lambda(\bar{p}^S)p_j^S$ for an Uncivic.

With respect to the North, Assumption 5 implies that, when enforcement is used, all the Uncivic in all localities contribute to the public good. This further implies that enforcement is costless ($k(1) = 0$) and therefore it is indeed used.[18] As a result, all northerners contribute and, moreover, any southern Uncivic migrant to the North will choose to contribute as well. The payoff of a subject of any type in any locality in the North is therefore $\lambda(1) - 1$. Note, however, that:

Remark 1 *Assumption 5 does not exclude the possibility that the least Civic localities in the North are less Civic than some localities in the South:* $\min_j p_j^N < \max_j p_j^S$.

2.2 The role of beliefs about being accepted in a different region

When a player emigrates to another locality, whether in the North or in the South, she is not guaranteed to be allowed to play the Public Good Game in the destination.[19] Beginning with the North, even if enforcement is used there and an Uncivic migrant is thus expected not to cheat, northerners may still refuse to play with migrants from South whom they suspect to be Uncivic, because letting in too many Uncivic bears the risk that $\bar{p}^N$ would fall below $g^{-1}(\frac{1}{\phi})$ (see equation 1), opening up to the possibility of switching to the other equilibrium, which is characterized by an uncivicness trap.[20]

As for the South, also this region fears letting in Uncivic migrants and hence may not allow them to play if there is a high probability that they are Uncivic. At the locality level, Uncivic migrants are expected not to contribute in the South (in the absence of enforcement)

[17] Out of 405 municipalities in Calabria, only 9 (2.2%) have agreed to cooperate with the central government in a joint initiative to detect and punish tax evasion between 2011 and 2017 (Decreto Legislativo 23/2011 and subsequent modification), even though the incentive to participate consisted of the possibility to keep for local expenditures all the sums recuperated from evaders. Source: UIL (2017).

[18] Out 333 municipalities of Emilia Romagna, 100 (30.0%) have accepted the invitation to join the central government in the above mentioned initiative to detect and punish tax evasion (see footnote 17). Source: UIL (2017). The prediction of our model that the North engages in more enforcement than the South is thus confirmed by the available evidence.

[19] There is anecdotal evidence that people from North statistically discriminate people from the South, considering them as less civic and untrustable. As a recent example, see Figure A–2.

[20] Similar arguments are made occasionally by proponents of restrictive migration policy from developing countries into the EU.

hence they will decrease everybody's share of the public good, while at the regional level they may decrease $\bar{p}^S$, which in the South has a direct impact on the efficiency of public good provision (through $\lambda(\bar{p}^S)$).[21] Therefore, if a potential migrant (to whatever region) thinks she is likely to be considered Uncivic in the place of destination (independently of her true type), she will be more reluctant to migrate because migration would entail the payment of a migration cost h without any benefit. In what follows we will focus only on migration from South to North, while migration in the opposite direction, which is empirically less relevant (see Section 3.3.1), will be analysed in the Appendix Section C.[22]

The possibility of not being allowed to play in the North explains the crucial role of the belief of a southern migrant about whether North will consider her Civic or Uncivic (a second order belief). In particular, we assume that South players base their belief about the chance of being allowed to join the game in the North on their local civicness level p_j^S (which incidentally also equals the actual level of contribution π_j^S).

Assumption 7 *A migrant from South to North assigns probability p_j^S to the event of being allowed to play in the destination locality.*[23]

This assumption reflects the idea that coming from a more civic locality in the South makes an immigrant more optimistic about the opinion that northern people have on her civicness. Evidence in favor of this assumption will be presented in Section 4.1.2.

The decision tree of a potential migrant from South to North is described in Figure 1.

[21] Our model could be extended to consider within-region migration, but this extension is outside the focus of the present paper.

[22] Specifically, Appendix Section C shows that our model is consistent with the empirical finding that very few students migrate from North to South.

[23] Note that this assigned probability could potentially be the actual probability of being accepted in the North. Without modelling explicitly this possibility, a simple procedure that would deliver it is as follows. Players of a destination locality in the North ask around if anybody knows anyone from the southern locality from which the migrant arrives, until somebody who knows one (random) person from there is found. If that random southern person is Civic, the migrant will be allowed to join the game, and if she is Uncivic she will not be allowed. This produces exactly a probability p_j^S of the event of being allowed to play in the destination locality, as stated in Assumption 7.

2.3 Migration from South to North and risk attitudes

The last ingredient that we need in order to model the decision of a southern player to migrate or stay is her *risk attitude*.[24] As explained earlier, if this player migrates to the North she contributes there, regardless of her type. Hence, she believes to face, in the North, a probability p_j^S of gaining a payoff of $\lambda(1)-1$ and 0 otherwise. Since players may differ in their attitude towards risk, we represent this stochastic payoff by $X_{i,j}^S(\lambda(1)-1)$, where X_{ij}^S is a measure of the combined effect of the belief p_j^S and the individual's risk attitude. One may think of $X_{i,j}^S(\lambda(1)-1)$ as capturing player i's *certainty equivalence* of a gamble yielding $\lambda(1)-1$ with probability p_j^S and 0 otherwise.

We let $X_{i,j}^S$ take the following form:

$$X_{i,j}^S = \frac{p_j^S q_i}{p_j^S q_i + (1-p_j^S)(1-q_i)}, \tag{2}$$

where q_i is a parameter capturing the attitude of individual i towards risk, with cumulative distribution functions $F_c(q)$ and $F_u(q)$ for Civic and Uncivic types respectively, both with full support in $(0,1)$. A smaller q_i means more risk aversion, and $q_i = \frac{1}{2}$ when the player is risk-neutral. We assume that $F_c(q)$ and $F_u(q)$ are independent of the local level of civicness p_j^r but may differ between Civic and Uncivic types. Thus, for any $p_j^S \neq \{0,1\}$, $X_{i,j}^S$ goes from 0 to 1 as q_i goes from 0 to 1, capturing an increased willingness to migrate as q_i increases,[25] while $X_{i,j} = 0$ ($X_{i,j} = 1$) independently of q_i if $p_j^S = 0$ ($p_j^S = 1$).

For both types, the total cost of migrating, inclusive of the opportunity cost, is h plus the payoff from remaining in the South. Denoting by v^τ the payoff that a player of type τ derives from the Public Goods Game played in the South, we get that the net gain from migration is given by

$$\mathbb{M}_{i,j}^{S,\tau} = X_{i,j}^S(\lambda(1)-1) - h - v^\tau. \tag{3}$$

[24] As shown for example by Jaeger et al. (2010), risk attitudes are an important determinant of migration decisions.

[25] As explained in Section 3.2, we have constructed an ordinal (11 levels) measure of risk seeking based on a non-incentivized question. Using this information, a regression of the measure for actual migration to North on the measure of risk seeking indicates that one step towards more willingness to take risks is associated with a 2.0 percentage points increase (two-sided p-value, 0.054) in the probability of migration to North of students in Calabria. This is consistent with the findings of Jaeger et al. (2010).

Defining $\bar{X}^\tau \equiv \frac{h+v^\tau}{\lambda(1)-1}$, we get that

$$\mathbb{M}_{i,j}^{S,\tau} > 0 \quad \Leftrightarrow \quad X_{i,j}^S > \bar{X}^\tau. \tag{4}$$

We then assume that a southern player i of type τ in locality j migrates to North if and only if (4) holds, so that her net gain from migration is positive.

2.4 The conditions for a Civicness or an Uncivicness drain

We now have all the elements to study under what conditions we should observe a Civicness or an Uncivicness drain from South to North. The characterisation of these conditions requires to analyse separately what happens at the extremes of support of the distribution of local civicness and what happens at intermediate values of the same support.

2.4.1 At the extremes of the distribution of local civicness

Starting with the case of $p_j^S \in \{0, 1\}$, we can prove the following proposition.

Proposition 1 *Let $\Delta\lambda \equiv \lambda(1)-\lambda(\bar{p}^S)$. At the extremes of the distribution of local civicness:*

1. *an Uncivicness drain cannot occur.*
2. *a Civicness drain can instead occur for a plausible range of values of the cost of migration. This range is:*
   - *(a) $0 < h < 1$ for a Civicness drain at $P_j^S = 0$.*
   - *(b) $\Delta\lambda - 1 < h < \Delta\lambda$ for a Civicness drain at $P_j^S = 1$.*

Part 1 of Proposition 1 is evident noting that, for any $q_i \in (0, 1)$, at $p_j^S = 0$ we have $\mathbb{M}_{i,j}^{S,\tau} > 0 \quad \Leftrightarrow \quad 0 > \bar{X}^\tau(p_j^S = 0) \quad \Leftrightarrow \quad 0 > h + v^\tau(p_j^S = 0)$, and at $p_j^S = 1$ we have $\mathbb{M}_{i,j}^{S,\tau} > 0 \quad \Leftrightarrow \quad 1 > \bar{X}^\tau(p_j^S = 1) = \frac{h+v^\tau(p_j^S=1)}{\lambda(1)-1}$. This means that at both extremes of the distribution of local civicness the decision to migrate does not dependent on i and hence either all individuals of a given type migrate or all of them stay. Furthermore, noting that the Uncivic derive a higher payoff than the Civic from remaining in the South (i.e., $v^u > v^c$

and therefore also $\bar{X}^u > \bar{X}^c$), we get that, at $p_j^S \in \{0, 1\}$, any difference in migration between the two types can only mean that all the Civic migrate and all the Uncivic stay.

Interestingly, Part 2 of Proposition 1 says that a Civicness drain is indeed possible under conditions that are plausible and not very restrictive. In particular, for all the Civic to migrate at $p_j^S = 0$ it must be that $0 > h + v^c(p_j^S = 0) = h - 1 \Rightarrow$

$$h < 1, \tag{5}$$

reflecting the idea that migration must cost less than the loss of a Civic player from being free-rided by everyone else in her community of origin. For all the Uncivic to stay instead at the same extreme, it must be that $0 < h + v^u(p_j^S = 0) = h \Rightarrow$

$$h > 0. \tag{6}$$

That is, migration must be costly.

Also a Civicness drain at $p_j^S = 1$ implies that all the Civic migrate while all the Uncivic do not. Hence for the Civic it must be that $1 > \frac{h+v^c(p_j^S=1)}{\lambda(1)-1} = \frac{h+\lambda(\bar{p}^S)-1}{\lambda(1)-1} \Rightarrow$

$$\Delta\lambda > h, \tag{7}$$

meaning that the productivity advantage in the North must be sufficiently high to make any Civic player willing to migrate even if all other players in her community of origin are Civic.[26] For the Uncivic we have instead $1 < \frac{h+v^u(p_j^S=1)}{\lambda(1)-1} = \frac{h+\lambda(\bar{p}^S)}{\lambda(1)-1} \Rightarrow$

$$\Delta\lambda - 1 < h, \tag{8}$$

which requires that, when all other players in the community of origin are Civic, the gain of an Uncivic from migrating (and subsequently switching from free riding to contributing) is smaller than the cost.

[26] For reference, the per-capita GDP ratio between the North and the South of Italy, based on national accounts statistics, has been approximately equal to 2 in recent years.

2.4.2 At intermediate values of the distribution of local civicness

Assuming that a Civicness drain occurs at the extremes of the support of local Civicness (i.e. inequalities (5) to (8) hold) we now investigate what happens at intermediate values of the support of the distribution. Denote by $\bar{q}_j^\tau$ the value of the risk attitude parameter q_i which makes an individual of type τ from locality j indifferent between migrating to North and staying in the South.[27] Thus, $1 - F_\tau(\bar{q}_j^\tau)$ is the fraction of migrants of type τ from locality j: at each location j, players of type τ who are less risk averse (or more risk seeking) than $\bar{q}_j^\tau$ have a positive net gain from migration and therefore migrate; those who are instead more risk averse than $\bar{q}_j^\tau$ have a negative net gain from migration and therefore stay. However, since the payoff v^τ in the South depends on whether one is Civic or Uncivic and since $F_c(\cdot)$ may differ from $F_u(\cdot)$, the fraction of migrants differs between the two types in each locality. In particular, the following lemma holds.

Lemma 1 *$\bar{q}_j^c < 0.5 \ \forall p_j^S \in [0,1]$ and $\bar{q}_j^u > 0.5 \ \forall p_j^S \in [0,1]$ if and only if there is Civicness drain at $p_j^S \in \{0,1\}$.*

Proof. See Appendix D.1 ■

The lemma says that, if and only if there is a civicness drain at $p_j^S \in \{0,1\}$, a risk-neutral Civic player ($q_i = 0.5$) always migrates (i.e., along the whole support of the distribution of local Civiciness) and a risk-neutral Uncivic player always stays. Thus, as a general tendency, we should expect the Civic to migrate while the Uncivic should stay. This is not surprising given that both types expect the same payoff in the North while they differ in their payoffs in the South, where the Uncivic free ride the Civic.

However, not all players are risk neutral. This raises the following questions: do *all* the Civic migrate along the whole support of the distribution of local Civiciness? And do all the Uncivic stay? The next proposition, gives a negative answer to both these questions.

Proposition 2 *Under the conditions that produce a Civicness drain at the extremes of the support of local Civicness, i.e. inequalities (5) to (8), along the support:*

[27] That is, $\bar{q}_j^\tau$ is the value for which inequality (4) holds with an equality sign. Note that $\bar{q}_j^\tau$ may be outside the range $(0,1)$, in which case either $\mathbb{M}_{i,j}^{S,\tau} > 0$ for any $q_i \in (0,1)$ or $\mathbb{M}_{i,j}^{S,\tau} < 0$ for any $q_i \in (0,1)$.

1. *Not all Civic migrate to North; specifically, the minimum propensity of Civic to migrate is obtained strictly in between the extremes of the support of local Civicness.*

2. *Not all Uncivic remain in the South; specifically, the maximum propensity of Uncivic to migrate is obtained strictly in between the extremes of the support of local Civicness.*

Proof. See Appendix D.2 ■

To see the intuition for the first part of Propostion 2, note that when $p_j^S \approx 0$ a Civic subject is surrounded almost only by Uncivic players. Even if she is risk averse, there are so few civic players in the population that there is no hope in staying in the South. Since the cost of migration is lower than the loss from being ripped off by the Uncivic players in the South – inequality (5) – the probability that a Civic type migrates is high in this case. When $p_j^S \approx 1$ instead, a Civic subject is surrounded almost only by Civic players, as it would happen in the North. However, the technological advantage in the North and the likelihood of being allowed to play there are so high – inequality (7) – that the probability of migration is high as well. Finally, when p_j^S takes intermediate values, Civic players who are relatively risk averse ($q_i < \bar{q}_j^c$) do not migrate because in the South they can still get a reasonable payoff, while in the North they risk not being allowed to play. Therefore, the fraction of Civic migrants is lower than when p_j^S is very high or very low.

As for the second part of Propostion 2, note that when $p_j^S \approx 0$ an Uncivic subject is surrounded almost only by Uncivic players. Hence, staying in the South is not very attractive, as there is no one to free ride on. However, given that p_j^S is low, an Uncivic player expects the North to believe that South players are Uncivic. Therefore, she believes that the probability of not being given the possibility to play in the North is high. Since migration involves a positive cost – inequality (6) – the fraction of Uncivic migrants is low. When $p_j^S \approx 1$ instead, an Uncivic type is surrounded almost only by Civic players, as it would happen in the North, so staying in the South is very attractive. And while the probability of being allowed to play in the North is believed to be high because p_j^S is high, the technological advantage of the North is not sufficiently large to compensate for losing the large payoff from free-riding on Civic players in the South plus the cost of migration – inequality (8). Therefore also in this case the fraction of Uncivic migrants is low. Finally, when p_j^S takes intermediate

values, the relatively risk-seeking Uncivic players ($q_i > \bar{q}_j^u$) migrate because they cannot free-ride on sufficiently many Civic players, while they are willing to take the risk and try their luck in the North, where they have a decent chance to be allowed to play. Therefore, in this case the fraction of Uncivic migrants is higher than when p_j^S is very high or very low.

Note that Proposition 2 opens up the possibility that, even if a Civicness drain is observed at $p_j^S \in \{0, 1\}$, an uncivicness drain takes place at intermediate values of the support of local civicness if enough Civic stay and enough Uncivic migrate at such values. Whether this possibility materializes in a specific population depends on the intensity of the differences between the risk attitudes of Civic and Uncivic types, as stated in our next and last proposition.[28]

Proposition 3 *Under the conditions that produce a Civicness drain at the extremes of the support of local Civicness:*

1. *An Uncivicness drain at intermediate values can occur only if the Civic are sufficiently more risk averse than the Uncivic.*

2. *Otherwise, a Civcness drain occurs at all values of local civicness.*

Proof. See Appendix D.3 ■

The first result provides a necessary and testable condition for an Uncivicness drain at intermediate values of local civicness: the Civic must be more risk averse than the Uncivic. The rationale behind this result is that risk averse players tend to stay in the South while risk-seeking players tend to migrate, hence risk seeking needs to be sufficiently higher among the Uncivic in order to compensate for the baseline tendency of the Uncivic to stay and of the Civic to migrate.

The second result says that otherwise, and in particular if risk attitudes of Civic and Uncivic types are identical, a Civicness drain would prevail at all levels of local civicness. The reason is simple. Lemma 1 tells us that, for any value of p_j^S, all the risk seeking among

[28]Note that in our model an uncivicness drain at intermediate levels of local civicness cannot originate from the Civic having different beliefs than the Uncivic. In fact, by construction Civic and Uncivic subjects in the same locality share the same belief about being allowed to play in the North, because such belief is equal to the level of local civicness. Instead, the driving force is the difference in the distribution of risk attitudes between the two types.

the Civic migrate (because even the risk neutral Civic does), while only some of the risk seeking among the Uncivic migrate as well (because the risk neutral Uncivic does not). This holds also at intermediate levels of p_j^S, implying that, if risk attitudes of Civic and Uncivic types are identical, a Civicness drain should be observed also at intermediate levels of local civicness.

Proposition 1, 2 and 3 thus provide testable predictions that will be confronted with our evidence in Section 4. Before doing so, however, we describe our data collection effort in the next section.

3 The data and the experiment

3.1 Schools and locations

We focus our attention on a population of senior students attending the last year of the Italian high-school tracks dedicated to humanities ("Liceo Classico") and to sciences ("Liceo Scientifico"). These students find themselves at a turning point in their life, when they have to decide if they want to go to college after matriculation (and where) or if they want to enter immediately the labor market.[29] Since boarding high-schools are practically absent in Italy, this is also the first real occasion these subjects have to leave home. For the purpose of this study, this population has also the advantage that for each subject we can identify a well defined community of peers in which to measure the degree of local civicness that the subject experiences: this is the high-school class of the student which (differently than in other countries) in Italy typically remains the same for all subjects of studies (none of which is optional) for the entire five years of the curriculum and is thus more relevant, as a group of peers for a student, than the school. Moreover, while the school is chosen by the student, the assignment to a class within a school is constrained by rules determining class size.[30] Of course, the high-school class is not the only local community to which a student belongs,

[29] According to national statistics for the year 2014, 94% of the students attending a "Liceo classico" go to college, and the same happens for 92% of those attending a "Liceo Scientifico". In our sample, to be described below, about 90% of respondents continue their education towards a college degree. Source: Indagine ISTAT sui Diplomati and "MIUR - Ufficio Statistica e Studi (Department of Statistics of the Ministry of Education)".

[30] See Angrist, Battistin, and Vuri (2017), Ballatore, Fort, and Ichino (2018).

but it is arguably a very relevant and stable one.

To obtain the necessary information for this kind of population, in January of 2015 we identified 18 eligible "Licei", all public, in the province of Cosenza, which is located in the southern Italian region of Calabria (see Figure A–1). We selected this province for three reasons. First, Calabria, and Cosenza in particular, rank very low in Italy with respect to many proxies of social capital,[31] but, as we will see using our proxy of civicness, there is heterogeneity within the province. Second, Calabria is one of the Italian regions with the highest net overall emigration rate.[32] And third, even though three university campuses are located in the region,[33] the fraction of high-school graduates going to college in the North is the highest among southern regions: 36% according to the Italian Ministry of Education,[34] a figure that is close to what we see in our sample where the fraction of emigrants to North is 32%, of which 97% emigrate to study.

We included in the experiment the first 11 schools that answered our invitation to participate in a general research project aimed at investigating the relationship between characteristics of students and university choices.[35] Figure A–1 shows where these schools are located. Note in particular that they are on average 46 minutes away by car (according to Google maps) from the closest university (denoted by a star in Figure A–1), with a minimum of 14 minutes and a maximum of 97 minutes. Therefore, migration to go to college was not strictly necessary for these students. For each school, we selected three classes randomly (or according to the teachers availability when random selection was not possible). In schools with more than three classes, we decided not to involve all the eligible ones in order to run the experiment simultaneously within the same school, preventing communication between classes, with only three teams of helpers. The average size of the 33 participating classes

[31] Out of 103 provinces, Cosenza ranks 96^{th} in terms of referenda turnout according to Guiso, Sapienza, and Zingales (2004), while it ranks 94^{th} in terms of voluntary associations per 1000 inhabitants and 98^{th} in terms of blood donations per 1000 inhabitants according to Buonanno, Montolio, and Vanin (2009) and Cartocci (2007) respectively.

[32] This rate is equal to 3.58% in 2013 according to Colucci and Gallo (2015) and is second only to that of Campania (3.66%). A similar figure (3.2%) is given by Istat (2015b) for 2015.

[33] Università degli Studi della Magna Grecia (Catanzaro), Università della Calabria (Cosenza), Università degli Studi Mediterranea (Reggio Calabria).

[34] Source: "MIUR - Ufficio Statistica e Studi (Department of Statistics of the Ministry of Education)".

[35] See the Online Appendix for the letters that we used to contact the school principals.

was 20.3 (st. dev.: 4.2) with a minimum of 11 and a maximum of 28.[36]

As an indication of how these high-schools compare with the rest of the "licei" in Calabria we use the Index of School Quality developed by the Fondazione Agnelli, which is based on the GPA of the graduates of each school in the first year of college studies. For the 11 schools that we consider the index is equal to 59.3 (st. dev.: 4.9), on a scale from 1 to 100, compared to an average of 57.65 for all the schools in the region. This suggests that there should be no reason to expect the schools included in the sample to be special in any relevant way.

To obtain a comparison benchmark for the North, we replicated this selection procedure in three contiguous provinces, Ravenna, Forlì and Ferrara, located in Emilia-Romagna (see again Figure A–1). The reasons to focus on this region of the North are specular with respect to those for Calabria. Emilia-Romagna ranks very high in Italy with respect to many proxies of social capital,[37] but also in this case we observe some within-province heterogeneity using our proxy of civicness, although to a smaller extent than in Calabria. In addition, Emilia-Romagna is the Italian region with the highest net overall immigration rate (+2.7%, according to Colucci and Gallo, 2015). Finally, also this region is scattered with many university campuses[38] and, differently from Calabria, it is relatively infrequent that students leave Emilia-Romagna to go to college. According to the Italian Ministry of Education, this happens only for 19% of high-school graduates,[39] and in our sample this figure is even lower (14%, of which 93% to study; less than 1% in a southern college).

The data collection for Emilia-Romagna took place one year later. In January of 2016 we approached the 16 eligible high-schools of the Ravenna, Forlì and Ferrara provinces, selecting the first 12 that replied to our contact. Figure A–1 shows where these schools are located. The average distance of the schools from the closest university (denoted by a star in the

[36]Class size is based on the 83% of students who were present on the day of the experiment. According to Educazione&scuola (1998), 78.3% of southern Italian students enrolled in a "Liceo" attend their high school on an average day. We therefore have no reason to think that the absenteeism we have measured is related to our experimental activity, which if anything seems to have attracted attendance.

[37]Out of 103 provinces, Ravenna, Ferrara and Forlì rank 2^{nd}, 1^{st} and 16^{th}, respectively, in terms of referenda turnout according to Guiso, Sapienza, and Zingales (2004). According to Buonanno, Montolio, and Vanin (2009) they rank and 9^{th}, 29^{th} and 5^{th}, respectively, in terms of voluntary associations per 1000 inhabitants while according to Cartocci (2007) they rank 1^{st}, 12^{th} and 29^{th}, again respectively, in terms of number of blood donations per 1000 inhabitants.

[38]Università di Bologna, with campuses in Bologna, Cesena, Forlì, Ravenna and Rimini; Università di Ferrara, Università di Modena, Università di Parma and Università di Piacenza

[39]Source: "MIUR - Ufficio Statistica e Studi".

figure) is similar to what we observe in Calabria: 53 minutes by car (according to Google maps), with a minimum of 9 minutes and a maximum of 97 minutes. We selected up to two classes in each of them. Class size was on average smaller for the 23 classes of Emilia-Romagna: 17.1 (st. dev.: 4.3) with a minimum of 7 and a maximum of 23.[40] Finally, these 12 schools have a Fondazione Agnelli Index of Quality equal to 79.2 (st. dev.: 6.2) compared to a regional average of 74.21. This difference is statistically significant but quantitatively not too large. Moreover, both these figures are considerably higher than for Calabria.

In the end, 671 students participated in the experiment in Calabria and 394 in Emilia-Romagna. Table A–1 contains descriptive information about these students, which was collected with the procedure described in the next section. The experimental procedures are further described in the Appendix B.1 and in the Online Appendix.

3.2 The experimental tasks

The experiment was run in the classrooms during school hours, taking about 120 minutes to complete, and comprised three incentivized tasks, an ability test and a questionnaire.

The first task was a modified version of the die-roll task (see footnote 3), which we designed to introduce a social dimension of cheating. This is the crucial task for the goals of this paper. The data collection was presented as aimed at studying, in general, the determinants of college choices of high-school students. The framing was thus neutral with respect to the topic that we investigate, i.e., the interaction between civicness and migration.

Students were randomly re-seated in their classroom, after mobile partitions to prevent eye-contact had been installed, and received a plastic cup with a six-sided die, which they were asked to roll inside the cup for six times in order to check that it was fair. They were then asked to report the number drawn from the seventh roll, knowing that they would gain €10 if a six was reported and €0 if they reported a number between one and five. Participants also knew that the experimenters had allocated a fixed budget for the school, and that whatever remained of this budget after payments for the task would be transferred

[40] As for Emilia Romagna, class size is based on the 78% of students who were present on the day of the experiment. According to Educazione&scuola (1998) (see footnote 36), the corresponding average figure for northern student attending a "Liceo" is 93%. Therefore the experiment may have reduced attendance in Emilia Romagna, although it is not clear what kind of bias in our results this might have caused.

to the school in the form of paper for copy machines.[41] Therefore, participants who did not get a six faced a trade-off between private earnings they were not eligible for and relevant school resources to which contribution was mandatory but not enforceable. This trade-off is the basis for our proxy of civicness. Unlike the standard die-roll task where the conflict is between private earnings and the experimenter's budget, here the novelty lies in capturing the public good dimension of tax evasion: declaring a 6 after observing a 1-5 outcome is equivalent to giving a false tax declaration that subtracts resources from the community. In this way, our modified die-roll task captures the "mandatory public good game" described in our theoretical model. For those who get 6, not contributing to the public good is morally acceptable (even if they are civic), because the die roll result defines the shared rule that determines the contributors to the public good and those who are legitimately entitled to be exempt.[42]

The remaining tasks were administered for other goals of the overall research project and for this reason they are described in detail in the Appendix Section B.2 and in the Online Appendix. Some of them are nevertheless relevant here as well because their outcomes were used to construct control variables for the econometric analysis performed in this paper.

Specifically, inter-temporal preferences were measured with an incentivized task in which participants had to make six choices, each one between receiving €100 on the day after the session or a larger amount (increasing by €5 at each subsequent choice) after four weeks; the impatience level is the number of decisions in which a prefererence for "€100 immediately' was indicated. A measure of intellectual ability was constructed based on the responses to

[41] Due to funding limitations, this item is typically scarce in Italian schools and students are aware of this. The budget allocated to each school was computed as a fixed amount per student (estimated in a pilot conducted in Bologna, Emilia-Romagna, before the real data collection effort) multiplied by the number of participating students. Thus, actual choices in this task had no influence on the experimental budget. Maggian (2019) reports results from a similar type of experiment in which the leftover from a fixed budget was given to a charity or returned to the experimenter, depending on the treatment.

[42] After the task, participants were asked to place the die in the cup and the sheet with the reported number was collected before initiating other tasks. Students were also asked to answer two questions, one about repetitions in their die draws and one on their understanding of simple probability theory. These questions were added in order to keep the framing of the task as neutral as possible. The second one was also used to construct the measure of intellectual ability score described in the next section. The procedures were carefully designed in order to maximize anonymity and minimize the ability of the experimenters to check if participants had reported the true number. Participants were paid in private at the end of the session in the form of gasoline vouchers. The number of 500-sheets-paper packages that were transferred to schools ranged between 5 and 25.

a test in which students had 15 minutes to answer 8 multiple choice questions (from the PISA questionnaire), combined with the response to the second statistical question after the die-roll task (see footnote 42), with no monetary incentives. In a non-incentivized way we elicited also students' risk preferences (on a scale from 0 to 10 in which 0 indicated "no willingness to take risks" and 10 indicated "full availability to take any risk') and their willingness to trust others (using the corresponding question of the World Value Survey). Participants were also asked to answer some questions on their socio-demographic status (specifically on the affluence of their household and on the education of their parents), on their preferences, and on their plans for the future. The answers to these latter questions were used to construct alternative measures of migration, as described in Section 3.3.1.

3.3 The follow-up stage

A follow-up stage was implemented in the fall after graduation (December 2015 and 2016, respectively for Calabria and Emilia-Romagna). Students were contacted by e-mail or by phone to gather information on their current location, on whether they were studying and on where they were seeing themselves living in 10 years. This follow-up took 5-10 minutes of their time. If they could not be reached, we tried to gather information from their parents who were asked by phone to answer a shorter version of the follow up questionnaire.

3.3.1 Measuring migration

Since 23 students from Calabria (3.4%, of which about half Civic) and 41 from Emilia-Romagna (10.4%, of which about three quarters Civic) could not be reached (nor could their parents), we were able to construct a measure of real migration for 648 southern and 353 northern subjects. This is the migration outcome that we can measure precisely and that we thus want to relate to individual and local civicness. This observed migration status in the fall after graduation is also positively correlated in our data to migration intentions and to more long term and intense preferences concerning where to live. This is shown in Table 1, which compares the different measures at our disposal for the 648 students of Calabria. As for Emilia-Romagna, only 3 students were effectively observed to be in the South during

the fall after graduation, which is the reason why, in this paper, we concentrate mainly on the interaction between civicness and migration from South to North. However, to give an indication of the propensity to migrate of Emilia-Romagna students, in Table 2 we compare measures related to their decision to emigrate out of the region. Broadly speaking, students from Emilia-Romagna are less mobile than those from Calabria, even if just to go to a different northern region, and for them as well the measures of migration at our disposal are positively correlated.

3.3.2 Lost wallet questions

We elicited the participants' perception of civicness about Calabria and Emilia-Romagna using two non-incentivized variants of the "lost wallet question" (see footnote 6), which we adapted to our setting with the goal of assessing first and second order beliefs about the relative honesty of people in the North vs. the South of Italy. Specifically, we gathered the first order belief by asking students to imagine that they had lost their wallet and to guess if the probability with which their wallet would be returned in a city of Calabria (Cosenza) was lower, equal or higher than in a city of Emilia-Romagna (Forlì).[43] Then, to obtain the second order belief, participants from Calabria were asked what they thought would be the answer to the same question of a person born in Emilia-Romagna and participants from Emilia-Romagna had to guess what a person from Calabria would have answered.[44]

The information provided by these questions will play an important role in the interpretation of our evidence, although it should be noted that, regrettably, we have answers only for about 35% of the students from Calabria and 43% of those from Emilia-Romagna.

[43]The exact question was: "Imagine you have lost your wallet (which contained 100 euros in cash) while you were walking on the main street of your city of residence. The person who finds it is born in that city and does not personally know you. This person can trace you because there is an ID with your name and address in it. In your opinion what is the likelihood that the person who finds it will return it to you, in the case the city is Cosenza or the city is Forlì?"

[44]The exact question posed to Calabrian students was: "Imagine one poses the same question to a person who was born in Forlì. What do you think would be her answer?" Similarly for Emilia Romagna students.

4 Evidence on civicness and migration decisions

Having shown how we collected our data, in this section we first present evidence in favor of the model assumptions about the differences in civicness between North and South and about the determinants of beliefs formation for Southern students. We then test the predictions of the model.

4.1 Testing the assumptions of the model

4.1.1 Individual and local civicness in the North and in the South

Table 3 reports statistics on individual and local civicness in Calabria and Emilia-Romagna. A student is defined as (certainly) Civic if she does not report a six in the die-roll experiment, while local civicness is the fraction of Civic students in each high-school class considered in the study. Our first finding emerges from the first row of the table and provides evidence in support of Assumption 4 of our model.

Finding 1 *The Civic are more frequent in the North than in the South*

Specifically, while in Emilia-Romagna 71% of the 394 students can be defined as Civic, the same can be said about only 49% of the 671 students from Calabria, and the difference is statistically significant (p-value < 0.0001). The remaining students who reported a six may have been lucky Civic or truly Uncivic. Exploiting the Law of Large numbers and the observed proportion of certainly Civic students, we can infer that, of those reporting a six, $\approx 80\%$ are truly Uncivic in Calabria and $\approx 50\%$ in Emilia-Romagna.[45]

The rest of Table 3 describes the distribution of local civicness (i.e., the fraction of students not reporting a six in each class) across the classes that participated in the study, and confirms our first stylized fact. A Wilcoxon-Mann-Whitney test rejects the equality of the two distributions of local civicness for Calabria and Emilia-Romagna (p-value < 0.0001).

[45]The calculation for Calabria is as follows: For every 5 Civic getting (and reporting) 1-5, there is one lucky Civic getting (and reporting) a six. So observing $\approx 50\%$ reporting 1-5 implies $\approx 60\%$ Civic getting 1-6, and the rest (40%) are Uncivic. Then, if $\approx 40\%$ are Uncivic out of $\approx 50\%$ reporting a six it follows that $\approx 80\%$ of six-reporters are Uncivic. In an analogous way one can get the fraction for Emilia-Romagna.

Similarly, a non-parametric k-sample test rejects the null hypothesis that the median of local civicness in Calabria is larger or equal to the median for Emilia-Romagna (p-value < 0.0001).

In addition to the difference in the frequency of civic types, Table 3 reveals a second relevant difference between the distributions of local civicness in the two regions, which can be summarised in our second finding:

Finding 2 *The supports of the distributions of civicness across localities in Calabria and in Emilia Romagna overlap and the (log) variance is higher in the southern region.*

Note that this finding confirms the possibility hypothesized in Remark 1 of the model. Local civicness in Calabria ranges from a minimum of 6% to a maximum of 82% with a coefficient of variation equal to 32%, while in the northern region it ranges between 52% and 93%, with a coefficient of variation of only 17%. The observed minimum in Calabria might appear as an unreliable outlier class, but the 5^{th} percentile of local civicness is in any case considerably smaller in the southern region (30%) than in Emilia-Romagna (54%). Using the Fligner and Killeen non-parametric test we reject the null hypothesis that the (log) variance of the two distributions is the same with a p-value of 0.0027.

Summing up, this evidence confirms previous studies (see footnotes 1 and 2) that find a solid gap in proxies of social capital between the North and the South of Italy, together with a considerable dispersion within regions that is significantly larger in the South. These findings are reflected in the main assumptions on which our model is based, concerning differences in the distributions of local civicness between North and South.

4.1.2 Belief formation and local civicness

As explained in Section 3.3, we designed our own version of the "lost wallet question" to elicit the first order belief of students regarding the probability that a lost wallet is returned in the two regions and the second order belief about the same event. The distribution of the answers to these questions is described in Table 4.

The first order belief of participants from Emilia Romagna is in column 1, while for participants from Calabria it is in column 2. In both regions, the majority of subjects expects a lower return rate of the wallet in Calabria than in Emilia Romagna. This perception from

first order beliefs is amplified in the second order beliefs revealed by participants in the two regions (columns 3 and 4). The South is on average pessimistic about the belief of North on the civicness of southern people, actually more pessimistic than what northeners really are. About 66% of southern students (column 4) think that people in the North believe the probability of a returned wallet to be lower or much lower in Calabria, while in fact only about 28% of northern students have this first order belief (column 1). Emilia-Romagna students, instead, expect people in the South to have more optimistic views about the likelihood that the wallet is returned in Calabria: 77% of them (column 3) think that Calabrian students believe the probability to be similar or higher in the South, where in fact only 70% of southern students have this first order belief (column 2).

However, for the purpose of this paper, what is more interesting is the evidence in Table 5 which describes how the second order beliefs of southern students change with the level of local civicness they experience in their class. In column 1 we report the coefficient of a regression of the second order belief of the 124 Civic students in Calabria for which we have the information, on the local civicness of their classes with and without controls. The coefficients are positive and estimated with some precision, suggesting that, even if these southern Civic students are in general pessimistic about what North thinks about South, they become more optimistic when they live in more civic communities. For the 110 Uncivic students, the point estimates are positive as well but they are estimated less precisely (column 2).

We summarize this evidence in our third finding, which supports Assumption 7 of the theoretical model:

Finding 3 *There is a positive correlation between civicness in a southern locality and the second order belief of subjects in that locality on what North thinks of southern civicness.*

4.2 Testing the predictions of the model

4.2.1 Civicness or uncivicness drains

We now restrict the analysis to the 648 Calabrian students for whom we know for sure whether they emigrated or not from South to North in the fall after graduation. Denote

by $M_{i,j}^{S,\tau} = 1$ the event that student i of type $\tau \in \{c, u, \}$ in class j of region S (South) has emigrated to North, while $M_{i,j}^{S,\tau} = 0$ indicates that she remained in the South.

In Table 6 we report the odds ratio of migration to North of Civic vs. Uncivic students,

$$O^S = \frac{\dfrac{\mathbb{P}(M_{i,j}^{S,c} = 1)}{1 - \mathbb{P}(M_{i,j}^{S,c} = 1)}}{\dfrac{\mathbb{P}(M_{i,j}^{S,u} = 1)}{1 - \mathbb{P}(M_{i,j}^{S,u} = 1)}} \tag{9}$$

where $\mathbb{P}(M_{i,j}^{S,\tau} = 1)$ is the probability that a southern student of type τ migrates to North. In the first column, the odds ratio for the entire sample is 0.99, suggesting that, for the population that we study, there is no civicness drain from South to North *in the aggregate*. The remaining columns separate students in the lowest, the medium and the highest terciles of the distribution of local civicness. In line with Proposition 1, there is no evidence of an uncivicness drain at the extremes of the distribution of local civicness. Actually, we observe odds ratios considerably larger than 1 in classes in which the fraction of civic students is either lower than 0.4 (bottom tercile: $O^S = 1.16$) or higher than 0.58 (top tercile: $O^S = 1.17$). At the same time, in the intermediate tercile the odds ratio is just 0.70, suggesting an uncivicness drain in the middle of the distribution of local civicness.

To go beyond these descriptive results and to look for evidence in favor of the non-monotonic migration patterns predicted by Proposition 2, we estimate, separately for the Civic and the Uncivic, the following Logit model for the probability of migration to North:

$$\mathbb{P}(M_{i,j}^{S,\tau} = 1) = \Lambda(\alpha + \beta\psi(p_j^S) + \gamma Z_{i,j}) = \frac{e^{\alpha+\beta\psi(p_j^S)+\gamma Z_{i,j}}}{1 + e^{\alpha+\beta\psi(p_j^S)+\gamma Z_{i,j}}} \tag{10}$$

where $\psi(p_j^S)$ is a quadratic polynomial in local civicness and $Z_{i,j}$ is a set of control variables that we constructed with the information originated by the collateral tasks of the experiment and by the final questionnaire (see Section 3.2). These controls are described in Tables A–1 and A–2.

The estimated coefficient of the polynomial $\psi(p_j^S)$ are displayed in Table A–3, and they indicate a statistically significant U-shaped pattern of the probability of migration for the Civic as a function of local civicness, as well as a similarly significant Hump-shaped pattern

for the Uncivic. These migration patterns confirm the predictions of Proposition 2. The Civic are more likely to migrate at the extremes than in the middle of the distribution, while the opposite holds for the Uncivic.[46]

To visualize whether these patterns intersect and what kind of drains they may generate, in Figure 2 we plot the predicted probabilities of migration along the support of the distribution of local civicness together with their corresponding 95% confidence intervals. At the extremes of the support, it is immediately evident that the probability of migration of the Civic is significantly larger than the analogous probability for the Uncivic, while at intermediate values of local civicness the opposite happens although with overlapping 95% confidence intervals. However, in light of our model predictions, we need to use one-sided tests in order to assess formally if the predicted odds ratio of migration for the Civic versus the Uncivic, O^S, is greater than 1, implying a civicness drain, or smaller than 1, implying an uncivicness drain.

The results of these one-sided tests are reported in Table 7. The predicted probabilities of migration and their corresponding standard errors are displayed in columns 2 and 3 for the Civic and in columns 10 and 9 for the Uncivic. Column 6 shows the corresponding odds ratios O^S. Column 5 reports the p-value of a test for the null hypothesis that $H_0 : O^S \leq 1$: rejection of this null implies that $O^S > 1$ and that a civicness drain occurs at the corresponding level of local civicness.[47] Column 7 reports the p-value of the opposite test for the null hypothesis that $H_0 : O^S \geq 1$: rejection of this null implies that $O^S < 0$ and that an uncivicness drain

[46]It should be noted that the hump-shape profile for the truly Uncivic is probably more pronounced than the one shown in Table A–3 for the 6-reporters. This is because at high values of local civicness a large fraction of 6-reporters probably corresponds to lucky Civic. Assuming that lucky Civic behave as observed Civic, the probability of migration of the truly Uncivic at high local civicness should be lower than the observed probability of migration of 6-reporters. Denoting with $\bar{u}$ a truly Uncivic, her probability of migration can be recovered from

$$\mathbb{P}(M_{i,j}^{S,u}=1)=\frac{1}{(1-p_j^S)}\left[\frac{p_j^S}{5}\mathbb{P}(M_{i,j}^{S,c}=1)+(1-p_j^S-\frac{p_j^S}{5})\mathbb{P}(M_{i,j}^{S,\bar{u}}=1)\right]$$

where, given p_j^S, we assume that there is a fraction $p_j^S/5$ of lucky Civic among the $1-p_j^S$ six-reporters and we assign to the lucky Civic the same probability of migration that we observe for the surely Civic (one-five reporters). This expression implies a steeper decline on the right side of the hump shape A version of Table A–3 based on this correction is reported in the Online Appendix and shows a reinforced Hump shape for the truly Uncivic.

[47]The test statistic is $\dfrac{\mathbb{P}(M_{i,j}^{S,c}=1)-\mathbb{P}(M_{i,j}^{S,u}=1)}{\sqrt{\sigma_c^2+\sigma_u^2}}$ where σ_τ is the standard error of $\mathbb{P}(M_{i,j}^{S,\tau}=1)$.

occurs instead at the corresponding level of local civicness.[48]

When local civicness is very low, the odds ratio is significantly greater than 1, reaching a value of 24.27 for $p_j^S \approx 0$ (p-value=0.0002), 6.16 for $p_j^S = 0.1$ (p-value=0.0021) and 2.17 for $p_j^S = 0.2$ (p-value=0.0209). Proceeding along the support towards higher local civicness the odds ratio continues to decline reaching a statistically significant minimum of 0.73 when $p_j^S = 0.5$ (p-value=0.0253). Beyond this degree of local civicness, the odds ratio increases becoming again significantly greater than 1 at $p_j^S = 0.7$, with a value of 1.66 (p-value=0.0434), and reaching a maximum of 73.53 at $p_j^S \approx 1$ (p-value=0.000).

We summarize these results in our fourth finding:

Finding 4 *A statistically and quantitatively significant civicness drain takes place at high and low local civicness, while when local civicness is equal to 0.5 the Uncivic are more likely to emigrate than the Civic, generating a statistically significant uncivicness drain.*

In light of our theory, this finding of a civicness drain at high and low local civicness implies that conditions (5) to (8) of the model hold (Proposition 1). Moreover, given that these conditions hold, the pattern of migration as a function of local civicness should be U-shaped for the Civic and Hump-shaped for the Uncivic (Proposition 2), as we actually find. Moreover, these patterns are so pronounced that they intersect to generate an uncivicness drain in the middle of the distribution.

4.2.2 Risk attitudes of Civic and Uncivic types

The observation of a statistically significant Uncivicness drain in the middle of the distribution of local cicness implies, given Proposition 3, that the Civic should be more risk averse than the Uncivic. To see whether this is indeed the case, we exploit the non-incentivised measure of risk aversion that we collected with the procedure explained in Section 3.2. Specifically, we elicited (self-reported) students' risk preferences on a scale from 0 to 10, in which 0 indicates "no willingness to take risks" and 10 indicates "full availability to take any risk".[49]

[48] The test statistic is $\frac{\mathbb{P}(M_{i,j}^{S,u}=1) - \mathbb{P}(M_{i,j}^{S,c}=1)}{\sqrt{\sigma_u^2 + \sigma_c^2}}$.

[49] Self-reported measures of risk attitudes are often used in the literature. See, for example, Dohmen et al. (2011), Dohmen et al. (2017) and Falk et al. (2018). Dohmen et al. (2011) find that self-reported willingness to take risks correlates significantly with risk-taking behavior in the field.

Using this measure, we find a positive correlation between risk seeking and being Uncivic. In particular, as shown in Table 8, the distribution of risk seeking preferences for the Uncivic *stochastically dominates* the corresponding distribution for the Civic.[50] We test formally this assertion using the procedure proposed by Barrett and Donald (2003) and we reject the null that the distribution for the Civic weakly dominates in a stochastic sense the distribution for the Uncivic (test statistic = 1.46; p-value = 0.0142).[51]

We therefore conclude that:

Finding 5 *The Uncivic are significantly more risk-seeking than the Civic.*

Summarizing our results, we first show evidence of a quantitatively and statistically significant civicness drain from South to North at low and high values of local civicness. We know from the model that if a civicness drain occurs at the extremes of the distribution of local civicness and if subjects are not all risk neutral, the Civic should be less likely to emigrate at intermediate values of local civicness than at the extremes, and the opposite should hold for the Uncivic. We next look for evidence of these patterns for the two types of students and we find it. Moreover, we show that the two profiles of migration probability intersect generating a statistically significant uncivicness drain in the middle of the distribution of local civicness. Such result implies, according to the model, that the Uncivic should be more risk seeking than the Civic. This is indeed our final finding, which confirms also in this respect the predictions of our theory.

[50] That the Uncivic are more prone to risk-taking is also in line with the recent results reported in Table 4 of Falk et al. (2018), who study pairwise correlations between preferences across countries and find that risk taking is negatively correlated with positive reciprocity ($p < 0.05$) and positively correlated with negative reciprocity ($p < 0.10$).

[51] The test statistic is

$$\widehat{S_{cu}} = \sqrt{\frac{n_c \times n_u}{n_c + n_u}} \quad sup_{p_j^S \in (0,1)} (\widehat{F}_c(q) - \widehat{F}_u, (q))$$

where n_c and n_u are the numbers of Civic and Uncivic respectively; $p_j^S \in (0,1)$ denotes the common support of the two empirical distributions; $\widehat{F}_c(q)$, $\widehat{F}_u(q)$ are the cumulative distribution functions of the risk-seeking indicator for the two types. The p-value of the test is computed as p-value$= exp(-2(\widehat{S})^2)$ where $\widehat{S}$ is the observed value of the test.

5 Conclusions

Many regions around the world, and the South of Italy in particular, are characterised by a substantial heterogeneity of the degree of local civicness across nearby areas within the region. The findings of this paper are a first step towards the construction of a novel explanation of this heterogeneity. Our proposed explanation is based on the idea that initial conditions of local civicness affect migration decisions in a way that may have generated a civicness drain in some places and not in others.

Specifically, we propose a model that generates different migration patterns for Civic and Uncivic subjects and predicts that, abstracting from risk attitudes, the general trend would be a civicness drain from South to North. This is because the better enforcement of civic behavior in the North makes migration more attractive for the southern Civic. Since the North is more civic to begin with, as observed in our data, the better enforcement in this region is shown to be an equilibrium result. However, since there is a risk of not being welcomed in the North, the tendency to a civicness drain from the South is attenuated at intermediate values of local civicness, where uncertainty about the chances of being accepted is higher, because of the interaction between the risk attitudes of the two types and their beliefs about what North thinks of their civicness (independently of the truth). This attenuation may even generate an uncivicness drain in the middle of the distribution if the Uncivic are more risk-seeking than the Civic.

To test the predictions of the model we use data on college choices of Southern-Italian high-school students whom we can classify as Civic or Uncivic on the basis of their behavior in a die-roll experiment. We are also able to measure the degree of local civicness that these students have experienced in one of the most relevant communities in which they have spent time during their youth. This is their high-school class, in which the fraction of Civic peers observed in the same die-roll experiment provides the proxy of local civicness that we need. In this population, we observe a civicness drain only at high or low levels of local civicness, while the Uncivic are more likely to emigrate at intermediate levels. This implies, according to the model, that the Uncivic should be more risk seeking than the Civic, which is indeed confirmed by our data.

The novelty and main contribution of this analysis is to establish the possibility of a link between initial conditions of local civicness and the civicness composition of migration flows. This link can explain how migration flows may have shaped the large heterogeneity of currently observed local civicness in different areas of the South. Such current heterogeneity may be, at least partly, the outcome of the heterogeneous mix of Civic and Uncivic migrants previously leaving each area, a mix that in turn may have been driven by initial conditions of the distribution of local civicness. Exploring this dynamic general equilibrium extension of our static and partial equilibrium analysis comes next in our future research agenda.

References

Abeler, J., D. Nosenzo, and C. Raymond. 2018. "Prefereces for Truth-telling." *Econometrica, Forthcoming* .

Alesina, A. and P. Giuliano. 2014. *Handbook of Economic Growth*, vol. 2A, chap. Family Ties. The Netherlands: North Holland, 177–215.

Algan, Y., P. Cahuc, and M. Sangnier. 2017. "Trust and the Welfare State: the Twin Peaks Curve." *American Economic Journal: Applied Economics* 9 (4):216–49.

Angrist, Joshua D., Erich Battistin, and Daniela Vuri. 2017. "In a Small Moment: Class Size and Moral Hazard in the Italian Mezzogiorno." *American Economic Journal: Applied Economics* 9:216–249.

Ballatore, Rosario M., Margherita Fort, and Andrea Ichino. 2018. "The Tower of Babel in the classroom. Immigrants and Natives in Italian schools." *The Journal of Labor Economics* Forthcoming.

Banfield, E. C. 1958. *The Moral Basis of a Backward Society.* New York : The Free Press.

Barrett, G. F. and S. G. Donald. 2003. "Consistent Tests For Stochastic Dominance." *Econometrica* 71 (1):71–104.

Barsbai, Toman, Hillel Rapoport, Andreas Steinmayr, and Christoph Trebesch. 2017. "The effect of labor migration on the diffusion of democracy: evidence from a former Soviet Republic." *American Economic Journal: Applied Economics* 9 (3):36–69.

Bigoni, M., S. Bortolotti, M. Casari, D. Gambetta, and F. Pancotto. 2016. "Amoral Familism, Social Capital, or Trust? The Behavioural Foundations of the Italian North-South Divide." *Economic Journal* 126:1318–1341.

Borjas, G. 1987. "Self-selection and the earnings of immigrants." *American Economic Review* 77:531–553.

Borjas, G. J. 1989. "Economic Theory and International Migration." *The International Migration Review* 23 (3):457–485.

Buonanno, P., R. Durante, G. Prarolo, and P. Vanin. 2015. "Poor Institutions, Rich Mines: Resource Curse and the Origins of the Sicilian Mafia." *Economic Journal* 125:175–202.

Buonanno, P., D. Montolio, and P. Vanin. 2009. "Does social capital reduce crime?" *Journal of Law and Economics* 52:145–170.

Cartocci, R. 2007. *Mappe del tesoro. Atlante del capitale sociale in Italia.* IL Mulino.

Cohn, A and M.A. Marechal. 2018. "Laboratory Measure of Cheating Predicts School Misconduct." *The Economic Journal* 128:2743–2754.

Cohn, A., M.A. Marechal, and C. Zund. 2018. "Civic Honesty across the Globe." *University of Zurich, mimeo* .

Colucci, M. and S. Gallo. 2015. *Tempo di cambiare. Rapporto 2015 sulle migrazioni interne in Italia.* Donzelli Editore.

Dai, Z., F. Galeotti, and M. Villeval. 2016. "Cheating in the Lab Predicts Fraud in the Field: An Experiment in Public Transportation." *Management Science* :1–20.

Dohmen, T., A. Falk, B. H. H. Golsteyn, D. Huffman, and U. Sunde. 2017. "Risk Attitudes Across The Life Course." *The Economic Journal* 127 (605):F95–F116.

Dohmen, T., A. Falk, D. Huffman, U. Sunde, J. Schupp, and G. G. Wagner. 2011. "Individual risk attitudes: measurement, determinants, and behavioral consequences." *Journal of the European Economic Association* 9 (3):522–550.

Durante, R. 2010. "Climatic risk, cooperation and the co-evolution of culture and institutions." *CEPR Discussion paper 12380* .

Dustman, C. and J..S Gorlach. 2014. *Handbook of the Economics of Migration*, vol. 1A, chap. Selective Outmigration and the Estimation of Immigrants? Earnings Profiles. The Netherlands: North Holland, 489–533.

Educazione&scuola. 1998. "Indagine sulla fruizione del "Servizio Scuola" da parte degli studenti delle superiori, anno 1997-98." *www.edscuola.it* .

Falk, A., T. Dohmen, B. Enke, D. Huffman, and U. Sunde. 2018. "Global Evidence on Economic Preferences." *The Quarterly Journal of Economics, forthcoming* .

Fischbacher, U. and F. Foellmi-Heusi. 2013. "Lies in disguise: An experimental study on cheating." *Journal of the European Economic Association* 11 (3):525–547.

Gachter, S. and J. F. Schulz. 2016. "Intrinsic honesty and the prevalence of rule violations across societies." *Nature* 531:496–499.

Greif, A. and G. Tabellini. 2012. "The clan and the city: Sustaining cooperation in China and Europe." *mimeo* .

———. 2017. "The clan and the corporation: Sustaining cooperation in China and Europe." *Journal of Comparative Economics* 45 (1):1–35.

Guiso, L., P. Sapienza, and L Zingales. 2004. "The role of social capital in financial development." *American Economic Review* 94 (3):526–556.

Hanushek, E. A.., G. Schwerd, S. Wiederhold, and L. Woessmann. 2015. "Returns to skills around the world: Evidence from PIAAC." *European Economic Review* 73:103–130.

Harris, J. and M. Todaro. 1970. "Migration, unemployment and development: a two-sector analysis." *American Economic Review* 60:126?142.

Henrich, J., R. Boyd, S. Bowles, C. Camerer, E. Fehr, H. Gintis, and R. McElreath. 2001. "In Search of Homo Economicus: Behavioral Experiments in 15 Small-Scale Societies." *The American Economic Review* 91 (2):73–78.

Ichino, A. and G. Maggi. 2000. "Work Environment and Individual Background: Explaining Regional Shirking Differentials in a Large Italian Firm." *Quarterly Journal of Economics* 115 (3):1057–1090.

Istat. 2015a. "Indagine campionaria sull'inserimento professionale dei laureati, per l'anno 2015." *www.istat.it* .

———. 2015b. "Migrazioni Internazionali ed interne delle persone residenti in Italia, per l'anno 2015." *www.istat.it* .

Jaeger, D., T. Dohmen, A. Falk, and D. Huffman. 2010. "Direct Evidence on Risk Attitudes and Migration." *Review of Economics and Statistics* 92 (3):684–689.

Karadja, Mounir and Erik Prawitz. 2019. "Exit, Voice and Political Change: Evidence from Swedish Mass Migration to the United States." *Journal of Political Economy* 0 (ja):null. URL https://doi.org/10.1086/701682.

Knack, S. 2001. "Trust, Associational Life and Economic Performance." In *In J. F. Helliwell (ed), The Contribution of Human and Social Capital to Sustained Economic Growth and Well-Being. Quebec: Human Resources Development.*

Knack, S. and P. Keefer. 1994. "Does social capital have an economic payoff? A cross-country investigation." *Quarterly Journal of Economics* 112 (4):1251–1288.

Maggian, V. 2019. "Negative externalities of cheating: an experiment with charities." In *In A. Bucciol and N. Montinari (eds.), Dishonesty in Behavioral Economics.* Elseier.

McIntosh, S. and A. Vignoles. 2001. "Measuring and assessing the impact of basic skills on labour market outcomes." *Oxford Economic Paper* 53 (3):453–481.

Platteau, J. 2000. *Institutions, Social Norms, and Economic Development.* Harwood Academic Publishers & Routledge.

Putnam, R., R. Leonardi, and R. Nanetti. 1993. *Making Democracy Work: Civic Traditions in Modern Italy.* Princeton University Press.

Sapienza, P., A. Toldra-Simats, and L Zingales. 2013. "Understanding Trust." *Economic Journal* 123:1313–1332.

Tabellini, G. 2008. "The scope of cooperation: Values and incentives." *Quarterly Journal of Economics* 123 (3):905–950.

Todaro, M. 1970. "A model of labour migration and urban unemployment in less developed countries." *American Economic Review* 59:138?148.

UIL. 2017. "Compartecipazione dei comuni al contrasto all'evasione fiscale e contributiva, a cura della Unione Italiana Lavoratori, Servizio delle Politiche Territoriali." *www.uil.it* .

Table 1: Available measures of migration to the North for Calabria students

Measure of migration	Share of students	Correlation with observed migration to North	Observations
Went to North in the fall after graduation	33%	1	648
Intend to go to North in the fall after graduation	46%	0.53	648
Calabria is not the ideal place where to live	83%	0.17	648
Unlikely that in 10 years I live in Calabria	59%	0.23	596

Notes: The table reports statistics about four indicators of migration to North for Calabria students. In the first column, the first row reports the fraction of students observed in the North during the fall after graduation, which is the dependent variable in the empirical analysis of Section 4. The second and third rows report, respectively, the fraction of students that intend to migrate to North after graduation and the fraction of students who think that Calabria is not the ideal place to live, both as declared in the spring before graduation. The fourth row is the fraction of students who think it is unlikely that they will live in Calabria in ten years, as declared during the follow-up stage. The second column reports the correlations of each indicator with respect to the indicator in the first row.

Table 2: Available measures of migration out of the region for Emilia-Romagna students

Measure of migration	Share of students	Correlation with observed migration out of region	Observations
Left the region in the fall after graduation	16%	1	353
Intend to leave the region the fall after graduation	17%	0.44	353
Emilia-Romagna is not the ideal place where to live	51%	0.19	353
Unlikely that in 10 years I live in Emilia-Romagna	35%	0.25	348

Notes: The table reports statistics about four indicators of migration out of the region for Emilia-Romagna. In the first column, the first row reports the fraction of students observed outside the region during the fall after graduation. The second and third rows report, respectively, the fraction of students that intend to migrate out of the region after graduation and the fraction of students who think that Emilia-Romagna is not the ideal place to live, both as declared in the spring before graduation. The fourth row is the fraction of students who think it is unlikely that they will live in Emilia-Romagna in ten years, as declared during the follow-up stage. The second column reports the correlations of each indicator with respect to the indicator in the first row.

Table 3: Individual and local civicness in Calabria and Emilia-Romagna

Participants from →	Calabria	Emilia-Romagna
Fraction of Civic students	0.49	0.71
Distribution of local civicness		
Minimum	0.06	0.52
5^{th} percentile	0.30	0.54
Mean	0.50	0.73
Median	0.48	0.70
95^{th} percentile	0.75	0.92
Maximum	0.82	0.93
Coefficient of variation between classes	0.32	0.17
Log variance between classes	0.21	0.03
Students	671	394
Classes	33	23
Schools	11	12

Notes: The table reports statistics on individual and local civicness based on the die-roll task for Calabria and Emilia-Romagna. A student is defined as Civic if she did not report a six in the die-roll task. In the first row the unit of observation is a student. In the rest of the table the unit of observation is a class and local civicness is defined as the fraction of Civic students in each class. The different unit of observation in the two parts of the table explains why the fraction of civic students in the first row differs from the mean of local civicness in the fourth row.

Table 4: Beliefs about the relative civicness of North versus South (lost wallet questions)

Likelihood that the wallet is returned	Question 1: First order belief of students from: Emilia-Romagna	Calabria	Question 2: Second order belief of students from: Emilia-Romagna	Calabria
Much less likely in Calabria than in Emilia-Romagna	15 (9%)	20 (9%)	5 (3%)	73 (31%)
Less likely in Calabria than in Emilia-Romagna	32 (19%)	50 (21%)	33 (19%)	82 (35%)
Similar in the two places	116 (68%)	134 (57%)	91 (53%)	48 (21%)
More likely in Calabria than in Emilia-Romagna	4 (2%)	20 (9%)	28 (16%)	20 (9%)
Much more likely in Calabria than in Romagna	3 (2%)	10 (4%)	13 (8%)	11 (5%)
Total	170 (100%)	234 (100%)	170 (100%)	234 (100%)

Notes: This table reports the frequency of the answers to the two "lost wallet questions" (see Section 3.3.2) asked to students during the follow up stage. In the first question students were asked to imagine that they had lost their wallet containing €100 and to guess if the probability that their wallet would be returned in Calabria was lower, equal or higher than in Emilia-Romagna. The answers to this question reveal the average first order belief of a person from the South (North) guessing the relative likelihood that her wallet would be returned in the two regions. In the second question, participants from Calabria (Emilia-Romagna) were asked what they thought would be the answer to the same question of a person born in Emilia-Romagna (Calabria). The answers to this question reveal the average second order belief of a person from the South (North) concerning what a person of the North (South) thinks about the relative likelihood that the wallet is returned in the two regions.

Table 5: Relation between second order beliefs of students in Calabria and local civicness

	Second order belief of a Civic student	Second order belief of an Uncivic student
Local civicness	1.074*	0.858
with controls	(0.574)	(0.986)
Observations	124	110

Notes: This table reports OLS estimates of regressions of the second order beliefs of students from Calabria on local civicness (proportion of students reporting 1-5 in a class), by student type. The analysis is conducted on the 234 individuals who answered the two "lost wallet questions" described in the notes to Table 4 and in Section 3.3.2. The dependent variable (second order belief) is coded on a 1-to-5 scale reflecting the five possible answers described in Table 4, where 1 = "Much less likely in Calabria than in Emilia-Romagna" and 5 = "Much more likely in Calabria than in Romagna". A positive coefficient thus indicates that where local civicness is higher, the second order beliefs of Civic (column 1) and Uncivic (column 2) are more favorable to South. The regressions in the second row control for gender, intellectual ability, average intellectual ability in the class, risk seeking, impatience level, trust in others, family income, parental education, urban area, class size, the fractions of Civic and Uncivic classmates who declared the intention to migrate to North at the time of the experiment, as well as for the identity of the helpers who ran the experiment. For definitions and descriptive statistics of these variables see Tables A–1 and Table A–2. The Online Appendix, reports the full set of results including estimates of the coefficients of the control variables. Robust Standard Errors (in parentheses) are clusterized at the class level. Significance: * 0.1; ** 0.05; *** 0.01 or better.

Table 6: Civicness drain at different levels of local civicness

	ALL classes	Low local civicness $p_j^S \leq 0.4$	Medium local civicness $0.4 < p_j^S \leq 0.58$	High local civicness $0.58 < p_j^S$
Odds ratio of migration	0.99	1.16	0.70	1.17
Observations	648	223	220	205

Notes: The table reports the odds ratios of migration to North of Civic versus Uncivic southern students, as defined in equation (9). Students in all classes are considered in column 1, while students in the lowest, the medium and the highest tercile of the distribution of local civicness (fraction of students reporting 1-5 in a class) are considered in the remaining columns. The division into terciles is such that each tercile is composed of 11 classes out of the total of 33 Calabrian classes.

Table 7: Odds ratio of migration for Civic versus Uncivic students along the support of the distribution of local civicness

	Civic		Test on odds ratios			Uncivic	
Local civicness	Prob. of migration	Standard error	p-value for $H_0: O^S \leq 1$	Odds ratio O^S	p-value for $H_0: O^S \geq 1$	Standard error	Prob. of migration
1	2	3	5	6	7	9	10
0	0.69	0.16	0.0002	24.27	0.9998	0.045	0.084
0.1	0.54	0.12	0.0021	6.16	0.9979	0.045	0.16
0.2	0.42	0.076	0.0209	2.17	0.9791	0.036	0.25
0.3	0.34	0.042	0.3584	1.09	0.6416	0.033	0.32
0.4	0.3	0.027	0.9272	0.76	0.0728	0.034	0.36
0.5	0.29	0.024	0.9747	0.73	0.0253	0.030	0.36
0.6	0.32	0.026	0.6547	0.96	0.3453	0.032	0.33
0.7	0.38	0.038	0.0434	1.66	0.9566	0.054	0.27
0.8	0.49	0.067	0.0015	4.38	0.9985	0.077	0.18
0.9	0.63	0.1	0.0000	15.32	1.0000	0.079	0.10
1	0.78	0.12	0.0000	73.53	1.0000	0.056	0.046
Observations	320			648		328	

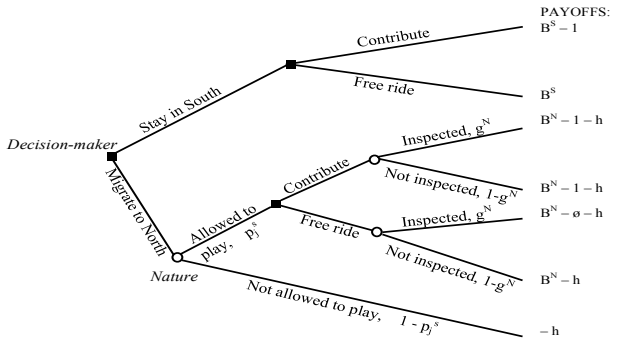
Notes: For the levels of local civicness listed in column 1, this table reports predicted probabilities of migration to North for the Civic (column 2) and the Uncivic (column10), estimated with a logit model of the migration indicator $M_{i,j}^{S,\tau}$ on a quadratic polynomial in local civicness p_j^S (proportion of students reporting 1-5 in class) and controls (see equation 10). The estimated coefficients of the Logit model are displayed in Table A–3. The included controls are: gender, intellectual ability, average intellectual ability in the class, risk seeking, impatience level, trust in others, family income, parental education, urban area, class size, the fractions of Civic and Uncivic classmates who declared the intention to migrate to North at the time of the experiment, as well as the identity of the helpers who ran the experiment. For definitions and descriptive statistics of these variables see Tables A–1 and Table A–2. Standard errors for the predicted probabilities are computed with the Delta method and are reported, respectively, in column 3 for the Civic and 9 for the Uncivic. Columns 6 reports the predicted Odds Ratio O^S of migration of Civic versus Uncivic students (see equation 9), for the level of local civicness corresponding to each row. Column 5 contains the p-value of a test for the null hypothesis that $O^S \leq 1$. The test statistic is $\frac{\mathbb{P}(M_{i,j}^{S,c}=1)-\mathbb{P}(M_{i,j}^{S,u}=1)}{\sqrt{\sigma_c^2+\sigma_u^2}}$ where σ_τ is the standard error of $\mathbb{P}(M_{i,j}^{S,\tau}=1)$ reported in columns 3 for the Civic and 9 for the Uncivic. Column 7 contains the p-value of the opposite test for the null hypothesis that $O^S \geq 1$. The test statistic is $\frac{\mathbb{P}(M_{i,j}^{S,u}=1)-\mathbb{P}(M_{i,j}^{S,c}=1)}{\sqrt{\sigma_u^2+\sigma_c^2}}$.

Table 8: Risk seeking of Civic and Uncivic types in Calabria

Willingness to take risks	Civic			Uncivic		
	Number of participants	Share	Cumulative share	Number of participants	Share	Cumulative share
0 (not willing to take risks)	2	0.60	0.60	0	0.0	0.0
1	1	0.30	0.91	1	0.29	0.29
2	4	1.21	2.11	1	0.29	0.59
3	6	1.81	3.93	5	1.47	2.06
4	17	5.14	9.06	11	3.24	5.29
5	48	14.50	23.56	36	10.59	15.88
6	43	12.99	36.56	32	9.41	25.29
7	82	24.77	61.33	90	26.47	51.76
8	83	25.08	86.40	98	28.82	80.59
9	32	9.67	96.07	38	11.18	91.76
10 (very prone to take risks)	13	3.93	100.00	28	8.24	100.00
Observations		331			340	

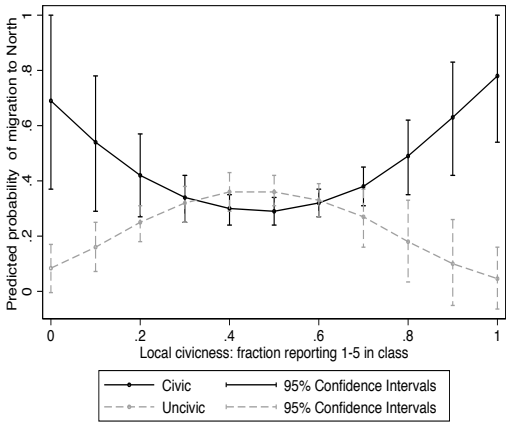
Notes: This table reports, separately for Civic and Uncivic students of Calabria, the statistical distribution of answers to the following question (non-incentivized): "How would you describe yourself: are you ready to take risks, or rather you try to avoid taking any risk?". This question was part of the questionnaire administered to students at the end of the experiment (see Section 3). The distribution for Uncivic individuals stochastically dominates that for Civic individuals, which implies that the former are more willing to take risks.

Figure 1: The decision tree



Notes: A person from a locality j in the South decides whether to migrate and how much to contribute to the public good. Migration cost is h. The individual cost of contribution is 1 and the individual benefit from the public good is $B^r = \lambda(\bar{\pi}^r)\pi_j^r - k(\bar{\pi}^r)$. The inspection probability is $g^r = g(\bar{\pi}^r)$.

Figure 2: Predicted probability of migration to North at different levels of local civicness



Notes: The figure plots predicted probabilities of observed migration to North, $\mathbb{P}(M_{i,j}^{S,\tau} = 1)$, based on a logit model of the migration indicator $M_{i,j}^{S,\tau}$ on a quadratic polynomial in local civicness p_j^S (proportion of students reporting 1-5 in class) and controls (see equation 10). The estimated coefficients of the Logit model are displayed in Table A–3. 95% confidence intervals for the predicted probabilities are computed with the Delta method (see Table **??**). Included controls are: gender, intellectual ability, average intellectual ability in the class, risk seeking, impatience level, trust in others, family income, parental education, urban area, class size, the fractions of Civic and Uncivic classmates who declared the intention to migrate to North at the time of the experiment, as well as for the identity of the helpers who ran the experiment. For definitions and descriptive statistics of these variables see Tables A–1 and Table A–2.

A Additional figures and tables

Figure A–1: Location of the high-schools

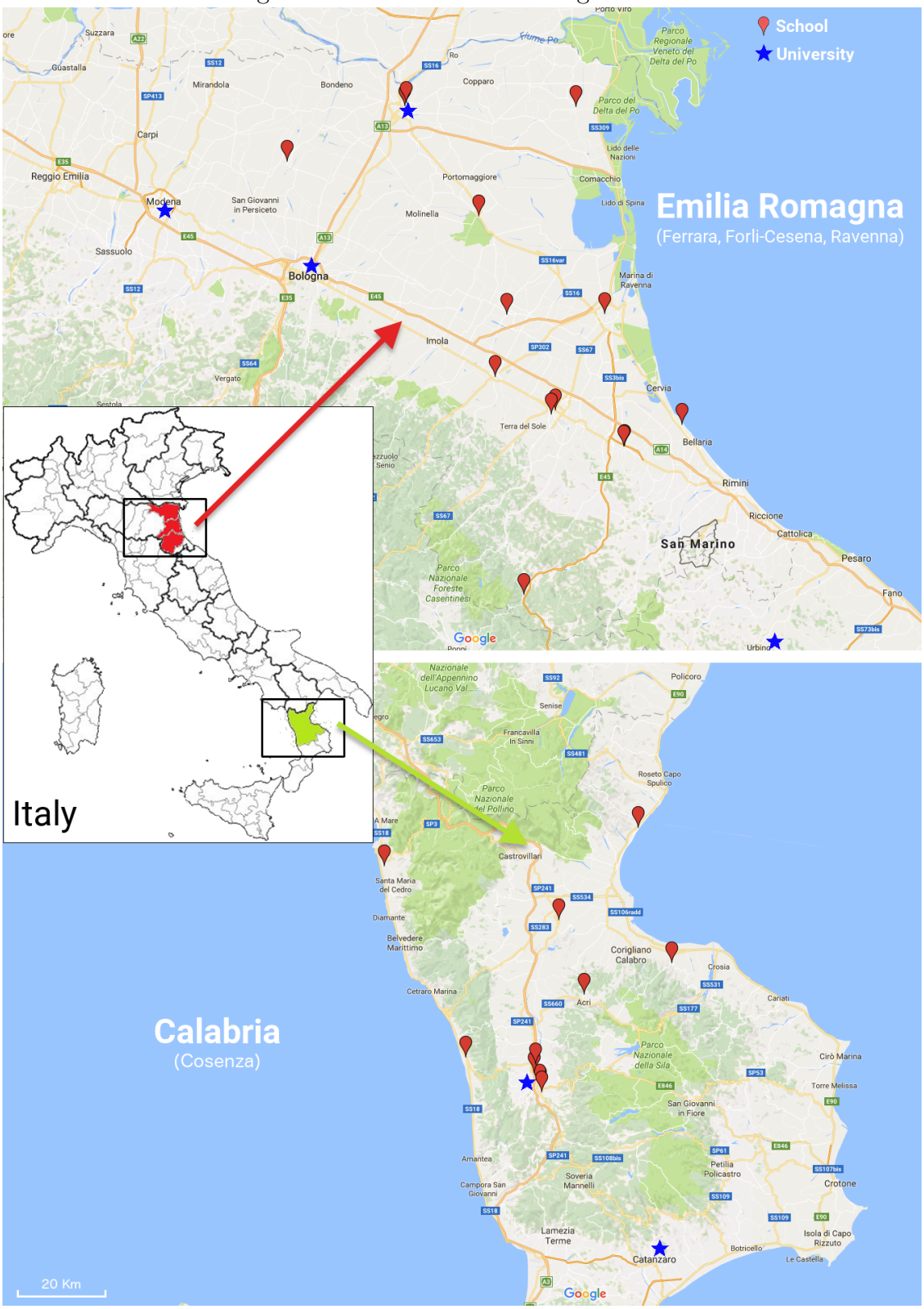


Figure A–2: What North thinks of South

Notes: This picture is taken from the national newspaper Corriere della Sera of March 11, 2017. The online version of the article can be found at this link and reports a warning attached to the main board of a major chain of supermarkets in the Northern region of Veneto. Cashiers are warned to be careful of the "well known Neapolitan crooks", a term used to refer to customers (whose geographical origin was in fact unknown) that had found a way to cheat on the price of expensive wine bottles by hiding them under less expensive ones in the kart. The supermarket chain was ordered to remove the warning.

Table A–1: Descriptive statistics of study participants

Variable	Mean	St. Dev.	Min	Max
Calabria (South of Italy), N=671				
Female	.57	.50	0	1
Intellectual ability	4.77	1.76	0	9
Average intellectual ability in class	4.77	0.39	4.07	5.53
Risk seeking	2.97	1.71	0	10
Impatience level	3.15	1.66	0	6
Trust for others	.08	0.27	0	1
High family income	.24	0.43	0	1
Low family income	.09	0.29	0	1
Years of average parental education	13.47	3.10	5	18
Urban area	.46	.50	0	1
Classical high school	.22	0.42	0	1
Class size	21.18	4.01	11	28
Missing real migration information	.03	.18	0	1
Emilia-Romagna (North of Italy), N=394				
Female	.56	.50	0	1
Intellectual ability	6.00	1.77	0	9
Average intellectual ability in class	6.00	.66	3.77	7.09
Risk Seeking	3.25	1.75	0	9
Impatience level	2.24	1.45	0	6
Trust for others	.21	.40	0	1
High family income	.29	.45	0	1
Low family income	.11	.31	0	1
Years of average parental education	13.85	2.88	5	18
Urban area	.38	.49	0	1
Classical high school	.26	.44	0	1
Class Size	18.18	3.85	7	23
Missing real migration information	.10	.31	0	1

Notes: The table reports descriptive statistics for the students who participated in the study. Intellectual ability: number of correct answers to 9 (non-incentivized) questions, of which 8 are taken from the PISA questionnaire and 1 is a follow up statistical question asked to participants after the die-roll task. Risk seeking: each student positioned herself on a scale from 0 to 10 in which 0 indicated "no willingness to take risks" while 10 indicated "full availability to take any risk" (non-incentivized – see also Table 8). Impatience level: it was measured through an incentivized task with six choices, each one between receiving €100 on the day after the session or a larger amount (increasing by €5 at each subsequent choice) after four weeks; the impatience level is the number of decisions in which the student indicated to prefer the €100 immediately; therefore, the minimum impatience level is 0 and the maximum is 6. To five students who did not answer these questions we imputed the average impatience level. Trust for others: 1=most people can be trusted, and 0 otherwise, in the following question taken from the World Value Survey: "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?". Family income: high (low) if students self-reported that it was above (below) the average in their region (Calabria or Emilia Romagna respectively). The omitted category includes students who declared their family income to be around the Calabrian or Emilia Romagna average. Urban area: 1=living in the cities of Cosenza, Rende, Ferrara, Forlì, Ravenna, 0 otherwise. Classical high school: 1 = Liceo Classico, 0 = Liceo Scientifico. See Section 3 and the Online Appendix for more details. Average class size differs from that reported in Section 3.1, because here the unit of observation is an individual student while in the text it is a class.

Table A–2: Descriptive statistics for the controls included in the regressions for Calabria reported in Tables 5, 7 and A–3

Variable	Mean	Std. Dev.	Mean	Std. Dev.
	Civic		Uncivic	
All classes				
(N=320 Civic, N=328 Uncivic)				
Female	.58	.49	.56	.5
Intellectual Ability	4.73	1.87	4.84	1.62
Average class ability	4.76	.39	4.79	.39
Risk seeking	3.18	1.74	2.71	1.61
Impatience level	3.01	1.59	3.29	1.71
Trust for others	.08	.27	.08	.27
High family income	.22	.41	.27	.44
Low family income	.09	.28	.1	.3
Years of average parental education	13.26	3.19	13.68	3.04
Urban area	.46	.5	.48	.5
Classical high school	20.97	3.93	21.36	4.07
Class size	.2	.4	.24	.43
Peer Civic migrants	.47	.22	.42	.22
Peer Uncivic migrants	.45	.21	.45	.2
Helper 1	.38	.49	.3	.46
Helper 2	.33	.47	.34	.48

Notes: This table reports descriptive statistics for the control variables used in the regressions presented in tables in the main text. In the bottom panel the outlier class with $p_j^S = 0.06$ is dropped from the analysis. The exact definition of these variables, except for the last four, is provided in the notes to Table A–1. As for the last four variables; "Peer Civic migrants" is the fraction of Civic classmates who declared the intention to migrate to North at the time of the experiment; "Peer Uncivic migrants" is the fraction of Uncivic classmates who declared the same intention; Helper 1 and Helper 2 are dummies for the identity of the helpers who ran the experiments. See the Appendix Section B.1 for other details concerning how these variables were constructed.

Table A–3: Logit estimates of the probability of migration to North

	Civic	Uncivic
Local civicness	-10.08**	8.86***
	(4.06)	(3.29)
Local civicness squared	10.74***	-9.54**
	(3.86)	(3.95)
Observations	320	328
Controls	YES	YES

Notes: The table reports the coefficients of a quadratic polynomial in local civicness p_j^S (proportion of students reporting 1-5 in class), estimated with a Logit model in which the dependent variable is the indicator of observed migration to North ($M_{i,j}^{S,\tau}$). The analysis is based on 648 students, 320 Civic and 328 Uncivic. Included controls are for gender, intellectual ability, average intellectual ability in the class, risk seeking, impatience level, trust in others, family income, parental education, urban area, class size, the fractions of Civic and Uncivic classmates who declared the intention to migrate to North at the time of the experiment, as well as for the identity of the helpers who ran the experiment. For definitions and descriptive statistics of these variables see Tables A–1 and Table A–2. The Online Appendix, reports the full set of results including estimates of the coefficients of the control variables. Robust Standard Errors (in parentheses) are clusterized at the class level. Significance: * 0.1; ** 0.05; *** 0.01 or better.

B The experiment

B.1 Experimental procedures

Schools were contacted first with a short e-mail or phone call to the principals introducing the research team and the general goal of the research project, which was aimed at collecting information on the determinants of college choices of high-school students.[B–1] Principals and teachers were informed that some students would receive a payment related to the assignments they were asked to perform, and that the school would receive paper for copy machines as a thank you for its collaboration. Students received information as well about the goal of the data collection effort and they had to sign a consent form and a data release permission in order to participate.

Sessions took place in April-May 2015 in Calabria and in April-May 2016 in Emilia-Romagna. We chose this period of the year because it is close to the final matriculation exam, thus students' awareness of their future choices was the highest possible. During the experiment students were asked to provide their e-mail address, their mobile phone number and their parents' phone number in order to be approached during the following year to gather information on their college choices. They provided these contacts voluntarily and formally agreed to be approached in the future.

The class experiment was run by two helpers per class. Before starting with the assignments we allowed students who did not want to participate to leave the room, but nobody did so.[B–2] The assistants placed numbered separators on students' desks in order to avoid communication and visual contact. Then the students picked a random number from a bag and were seated at the corresponding desk (see the Online Appendix for a picture of a class during the experiment). This was done to avoid cluster in students by friendship. The teachers were usually not present during the activity [B–3]

The experiment was run by pen and paper and it comprised three incentivized tasks, an ability task and a questionnaire. At the beginning of each task, the relevant instructions were handed out and read aloud.[B–4] Before each task, students had to answer a quiz to ensure correct understanding of the task while helpers were going around to check for the answers and give explanations when needed. For the incentivized tasks students were paid in private at the end of the experiment using gasoline vouchers.

B.2 Collateral experimental tasks

Time preferences

The aim of the second task was to measure participants' inter-temporal preferences. Participants had to choose between receiving a smaller amount of money the day after the experiment or a larger amount in four weeks. They faced six choices in which the difference between sooner and later amounts increased gradually (see the Online Appendix). Participants could in principle receive an amount of money ranging from 100€ to 125€ in gasoline vouchers. Only one random participant per class was paid for this task. At the end of the activity the experimenter made two random draws, the first to select the participant paid for the task and the second to select one of the six choices for which the participant had been paid. The participant and his/her relevant choice were announced to the class to make the

[B–1] See the Online Appendix for the letters we used to communicate with the schools.

[B–2] After the experiment 4 students of one school asked us to remove their data although they had signed the consent. We removed them from the analysis.

[B–3] In one class in Emilia-Romagna and one class in Calabria the teachers stayed in the room without interfering with the activity.

[B–4] See the Online Appendix for the instructions that were distributed to students.

procedure transparent and to strengthen the research team credibility. The experimenter handed over an envelope to the headmaster with the amount gained by the participant who could collect it the following day or in four weeks depending on his/her choice.

Prisoner's Dilemma

The third task is a variation of the voluntary contribution to a public good game (Henrich et al. (2001)). Participants were informed that they had to play a game in pairs formed at random. The identity of the players in the pair remained hidden. They had to simultaneously decide how to invest 10 euros. They could keep the entire amount, invest half of the amount, or invest the whole amount. The amount invested was doubled and gained by the partner. The amount kept instead was cashed as earning by the participant. The students were shown all the possible outcomes of the game (see the Online Appendix), everyone made two decisions (A and B). First they had to choose how much to invest without knowing the partner's choice (Decision A), second they were asked how much to invest conditional on the partner's decision (Decision B). At the end of the experiment two randomly chosen students were paid for this task.[B–5] A coin was tossed to determine which of the selected students was paid for his/her Decision A and which for his/her Decision B. Students knew that the combination of the two decisions would have determined their payments. If both invested 10 euros they would have earned the maximum total amount (20 euros each) while if one invested 10 euros and the other defected, the former would have earned zero and the latter 30 euros. The payoffs for other combinations ranged between these two, as described in detail in the instructions. The outcome and the selected participants were not revealed to the class in order to guarantee the privacy of their choices.

This task was designed to measure the willingness of students to give money to a randomly matched partner from the class. Cooperation in such a game captures a different kind of behavior than civicness as measured by our version of the die-roll task with social consequences of cheating. Indeed, our data show that PD cooperation and civicness in our die-roll task have a very low and, if anything, negative correlation.[B–6] This evidence is in line with the literature showing that cooperation within one's small circle (classmates in our case) is not indicative of one's attitude toward adherence to social institutions (the school in our case).[B–7] Moreover, while there is a substantial gap in civicness between North and

[B–5] The student who was selected for the time preference game was not included in this random draw.

[B–6] This observation applies to two different measures of PD-based conditional cooperation that we have constructed. The first measure labels as "cooperative" any subject who chose (in strategy method) to give either 5 or 10 euros when conditioning on her opponent giving 10 euros. In our data, the correlation between this first measure of PD cooperation and civicness in the die-roll task is -0.06 in Calabria and -0.05 in Emilia Romagna. At the level of classes, the corresponding correlations are equal -0.2 in both regions. The second measure labels as "cooperative" any subject who chose to give at least as many euros as her opponent when conditioning on the opponent giving either 5 or 10 euros. The correlation between this second measure of PD cooperation and civicness in the die-roll task is -0.02 in both Calabria and Emilia Romagna. At the level of classes, the corresponding correlations are equal -0.4 in Calabria and 0.08 in Emilia Romagna.

[B–7] Sociologists indeed distinguish between limited vs. generalized morality; see, for example, Banfield (1958) and Platteau (2000) and the model subsequently developed in Tabellini (2008). As Tabellini (2008) writes: "Norms of limited morality are applicable only to a narrow circle of friends or relatives; with others, cheating is allowed and regularly occurs. Generalized morality instead applies generally towards everyone, and entails respect for abstract individuals and their rights." This distinction between the two types of cooperation level is also at the core of Greif and Tabellini (2017), who analyze the differences between the 'Clan' culture (i.e. limited cooperation) of China and the 'Corporation' culture (i.e. generalized cooperation) of Europe. Finally, Alesina and Giuliano (2014) show that strong family ties are negatively correlated with generalized trust, in line with the negative correlation we report here.

South, we do not see any gap in PD cooperation which, if anything, is lower in the North.[B–8]

Intellectual ability test

Participants had 15 minutes to answer 8 multiple choice questions with no monetary incentives. These questions were a subsample of the PISA (Programme for International Students Assessment) tests used to assess scientific competence worldwide. These are part of an international survey which aims at evaluating education systems. We chose to use this test as a measure of ability rather than school marks to ensure comparability across schools. Moreover tests for University admission adopt similar criteria and numeracy is shown to be correlated with labor market outcomes (McIntosh and Vignoles, 2001 and Hanushek et al., 2015). The Online Appendix describes the distribution of students' ability.

C Migration from North to South

Our model does not rule out migration from North to South. While Civic types will never want to migrate from North to South – they will not pay the migration cost to get to a place with lower efficiency of public good provision where they will be free-rided in the good case and not allowed to play in the bad case – for Uncivic the choice is less clear cut. In particular, an Uncivic type may be tempted to migrate in order to free ride others, which is not doable in the North. Our model predicts that such migration will be profitable for an Uncivic migrant from locality j' in the North to locality j in the South if $p^N_{j'}\lambda(\bar{p}^S)p^S_j - h > \lambda(1) - 1$.[C–1] Inequalities (5) to (8) do not exclude this possibility, but our data clearly show that such migration is practically non-existent. As shown in Section 3.1, less than one percent of the students of Emilia Romagna migrate to a southern region.

This observation has implications for the model parameters. If there is no migration from North to South, then in particular there is no migration even from a purely Civic locality in the North (in which $p^N_{j'} = 1$ hence the migrant is guaranteed to be allowed to play in the South). If we assume that migrants from the North cannot know in advance the exact local civicness in their place of destination in the South, and thus base their decisions on the average civicness in the South $\bar{p}^S$,[C–2] then a sufficient condition that guarantees no migration from North to South is $\lambda(\bar{p}^S)\bar{p}^S - h < \lambda(1) - 1$ (i.e., migration is not profitable even if the migrant is guaranteed to be allowed to play). If however migrants from the North can target an exact locality in the South (in terms of its local civicness), then a stricter condition is required in order to guarantee that even migrating to a purely Civic locality is not profitable. This condition is $\lambda(\bar{p}^S) - h < \lambda(1) - 1$, with the LHS of the inequality capturing the case where an Uncivic migrant is guaranteed to be able to free-ride a purely Civic locality in the South. Importantly, while not being guaranteed by inequalities (5) to (8), this condition does not contradict them. In particular, it can be joined to these four conditions, implying together that, in order to both reflect *Finding 4* and produce no migration from North to South, the conditions that should be met are $h \in (0, 1)$ and $\max\{h, 1-h\} < \Delta\lambda < 1 + h$.

[B–8] Using the first measure of PD cooperation described in footnote B–6, 69% of students cooperate in the South, while a lower fraction (66%) cooperate in the North. The corresponding figures using the second measure are 32% and 39%, respectively. In this case North cooperates more than South, but the difference is considerably smaller than the one emerging in the die-roll task.

[C–1] $\lambda(\bar{p}^S)p^S_j$ is the payoff of a free rider in the South and $p^N_{j'}$ is the probability he will be allowed to play the game there.

[C–2] Note that for migration in the opposite direction, i.e. from South to North, it does not matter what the southern migrant knows about the local civicness in the northern destination as long as he knows that enforcement takes place there and everybody contributes.

D Proofs

D.1 Proof of Lemma 1

The conditions appearing in the proposition can be interpreted as determining the migration decisions of an individual of type τ for whom $q_i = 1/2$. The first condition, $\bar{q}_j^c < 0.5$ $\forall p_j^S \in [0,1]$, states that if $\tau = c$ then this individual strictly prefers to emigrate, i.e.

$$\mathbb{M}_{i,j}^{S,c} > 0 \quad \Leftrightarrow \quad X_{i,j}^S > \bar{X} = \frac{h + v^c}{\lambda(1) - 1} = \frac{h + \lambda(\bar{p}^S)p_j^S - 1}{\lambda(1) - 1},$$

for any $p_j^S \in [0,1]$. Noting that for $q_i = 1/2$ the expression for $X_{i,j}^S$ boils down to simply equal p_j^S, this condition boils down to

$$p_j^S > \frac{h + \lambda(\bar{p}^S)p_j^S - 1}{\lambda(1) - 1} \Leftrightarrow \left[\lambda(1) - 1 - \lambda(\bar{p}^S)\right] p_j^S > h - 1,$$

for any $p_j^S \in [0,1]$. Since the LHS of the last inequality is monotonic in p_j^S, and given that it must hold for any $p_j^S \in [0,1]$, it is equivalent to requiring that it holds at the two extremes, $p_j^S \in \{0,1\}$.[D–1] We thus get $\bar{q}_j^c < 0.5$ $\forall p_j^S \in [0,1]$ if and only if inequalities (5) and (7) hold.

Similarly, the second condition in the proposition, $\bar{q}_j^u > 0.5$ $\forall p_j^S \in [0,1]$, states that if $\tau = u$ then an uncivic individual for whom $q_i = 1/2$ strictly prefers to stay, i.e.

$$p_j^S < \frac{h + v^u}{\lambda(1) - 1} = \frac{h + \lambda(\bar{p}^S)p_j^S}{\lambda(1) - 1} \Leftrightarrow \left[\lambda(1) - 1 - \lambda(\bar{p}^S)\right] p_j^S < h,$$

for any $p_j^S \in [0,1]$. Again, the LHS of the last inequality is monotonic in p_j^S, implying that $\bar{q}_j^u > 0.5$ $\forall p_j^S \in [0,1]$ if and only if inequalities (6) and (8) hold. This proves the proposition.

D.2 Proof of Proposition 2

Consider a Southern locality j with a sufficiently high local civicness p_j^S s.t. $\frac{1}{\lambda(\bar{p}^S)} \leq p_j^S < 1$ (so that the payoff of a Civic player in this locality, $\lambda(\bar{p}^S)p_j^S - 1$, is positive).[D–2] Then, if $h > 0$ (which holds by inequality (6)), we have $\bar{X}^\tau = \frac{h + \lambda(\bar{p}^S)p_j^S - 1}{\lambda(1) - 1} > 0$. Hence, there exists a Civic player with sufficiently small q for whom $X_{i,j}^S < \bar{X}^\tau$, implying that this Civic individual does not migrate.

Similarly, consider a Southern locality j with a sufficiently low local civicness p_j^S s.t. $0 < p_j^S \leq \frac{\lambda(\bar{p}^S) - 1}{\lambda(\bar{p}^S)}$ (so that the payoff of a Civic player in this locality, $\lambda(\bar{p}^S)p_j^S$, is smaller than $\lambda(\bar{p}^S) - 1$, which by Assumption 3 is strictly positive). Then, if $h < \Delta\lambda$ (which holds by inequality (7)), we have $\bar{X}^\tau = \frac{h + \lambda(\bar{p}^S)p_j^S}{\lambda(1) - 1} < \frac{h + \lambda(\bar{p}^S) - 1}{\lambda(1) - 1} < \frac{\Delta\lambda + \lambda(\bar{p}^S) - 1}{\lambda(1) - 1} = 1$. Hence, there exists an Uncivic player with sufficiently large q for whom $X_{i,j}^S > \bar{X}^\tau$, implying that this Civic

[D–1] Note that the special case in which $\lambda(1) - 1 - \lambda(\bar{p}^S) = 0$ is captured by the requirement that the inequality holds for $p_j^S = 0$.

[D–2] Such a locality exists by Assumption 3.

individual migrates.

D.3 Proof of Proposition 3

Lemma 1 tells us that if inequalities (5) to (8) hold, then (1) $\bar{q}_j^c < 0.5 \ \forall p_j^S \in [0,1]$, implying that $F_c\left(\bar{q}_j^c\right) < F_c\left(\frac{1}{2}\right)$ for any locality j, and (2) $\bar{q}_j^u > 0.5 \ \forall p_j^S \in [0,1]$, implying that $F_u\left(\frac{1}{2}\right) < F_u\left(\bar{q}_j^u\right)$ for any j. Then, the fact that Uncivicness drain is observed at intermediate levels of local civicness implies that $F_u\left(\bar{q}_j^u\right) < F_c\left(\bar{q}_j^c\right)$ for intermediate values of p_j^S. It thus follows that, at this range of intermediate values,

$$F_u\left(\frac{1}{2}\right) < F_u\left(\bar{q}_j^u\right) < F_c\left(\bar{q}_j^c\right) < F_c\left(\frac{1}{2}\right).$$

Finally, the independence of q_i in p_j^S implies that the inequality $F_u\left(\frac{1}{2}\right) < F_c\left(\frac{1}{2}\right)$ always holds, regardless of the locality j.