Does Cooperativeness Promote Happiness? Cross-country Evidence

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Abstract

Why is the share of happy people higher in some countries than in their equally developed neighbors? We conjecture that the apparent contradiction might depend on a country's endowment of relational goods, which we proxy empirically with the extent of cooperativeness. Compiling an index of the importance of the cooperative sector, we test whether higher values of the index associate with more happiness controlling for countries' HDI and other control variables. Checking for endogeneity, we find support for our hypothesis and that support is stronger for more developed countries. This suggests that, indeed, relational goods might help tackle Easterlin's paradox.

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Keywords: Extent of the cooperative sector; Happiness; Cross-country evidence.

1. Introduction

Easterlin's paradox – money alone doesn't always buy happiness (Easterlin, 1974) – is consistent with the finding that happiness differs significantly among comparable countries. For instance, across pairs of analogously affluent neighboring countries unhappy people by 2009 were 8% in Australia[1] vis-à-vis New Zealand's 3%; 21.5% in Greece against 7.5% in Spain; 18% in Slovenia against 9% in Poland.

We argue that different endowments of relational capital may help explain that paradox. Specifically, we take the diffusion of cooperatives in a country as a proxy for its extent of relational capital endowment for two reasons. First, theory suggests that, vis-à-vis private limited companies, cooperatives rely more on long-term and informal/implicit (rather than short-term/formal) contracts. Hence, we may expect that cooperatives tend to flourish in countries with larger relational capital endowments. Second, empirical cross-country data reveals a positive correlation between the extent of relational capital and the presence of cooperatives.

However, we have to deal with the paucity of data on the extent of the cooperative sector. This is somehow surprising since cooperatives play a significant role in almost every country. Possibly, the lack of official data on cooperatives descends from the debatable mainstream tenet that they represent an anomaly with respect to shareholder owned and profit seeking entities. So, finding detailed cross-country data on the extent of the cooperative sector wasn't easy as most sources are ad hoc, hardly comparable, studies. We complemented the study by Coopseurope (2010), covering 36 European countries, relying on ICA (2011), which provides details on the 300 largest global cooperatives. Combining the two data sources we use a joint rank ordering to reduce the probability

[1] For Australia, see also the specific debate emerged about this country (e.g., Blanchflower and Oswald, 2005; Leigh and Wolfers, 2006).

of measuring errors. So, our sample reaches 48 countries. This represents in itself a first contribution.

Next, we test whether a more cooperativeness in a country associates with a lower share of unhappy people. We control for the level of socio-economic development by introducing the Human Development Index (HDI) as a regressor alongside our cooperative variable and other control variables. Furthermore, we tackle the expected endogeneity coming from the fact that the extent of cooperativeness might be caused, rather than cause, the degree of happiness by implementing an instrumental variables approach. We find that cooperativeness significantly promotes happiness.

In the rest of the paper, Section 2 draws a review of the main contributions on happiness and relational goods, casting the debate on the background of civil economic thought. Section 3 presents the theoretical and empirical foundations justifying why the extent of the cooperative sector may be held as a good proxy of the endowment of relational goods a country has. This Section also describes the data we use in the empirical analysis. In Section 4 we introduce our econometric methodology and present our main findings. Section 5 concludes drawing policy implications and suggestions for future research.

2. Literature review on happiness and relational goods

Social capital has gained attention in the economics profession. To mention just three papers from a large and growing body of literature, Glaeser et al. (2002) use a standard optimal investment model to analyze an individual's decision to accumulate social capital and fail to find robust evidence that social capital investments fall with the value of time or that geographic/religious groups generate social capital complementarities. On the opposite, while also emphasizing the problems of reception, definition and operationalization of social capital, Adam and Rončević (2003) stress the need to build an inter- and trans-disciplinary collaboration of sociology and economics that seems at odds with the approach of Glaeser et al. (2002). In turn, Paldam (2000) underscores that three different definitions of social capital coexist – one related to trust, one to ease of cooperation, and one to network intensity – and that they only partly overlap. This suffices to understand that, although the importance of social capital is vastly recognized, the term 'social capital' may be used with different meanings and implications.

In addition, various scholars hold that there is a need to move beyond social capital. Empirical and theoretical literature is showing in the latest decades (at least from Putnam 1993), that: i) Civil virtues (social capital) and growth are positively correlated; ii) Social capital and happiness are positively correlated (Becchetti, 2008; Bartolini et al., 2011); iii) Relational goods and happiness

are positively correlated (Bruni and Stanca, 2008). In view of this background, our research question is the following: How does the cooperative culture interplay with these previous results?

Trying to answer this question some background on civil economic thought is useful. For economists, the big picture has traditionally featured the invisible hand (the public good as the unintended consequences of private "vices" – self interest –, mediated by the market). The classic texts are from Adam Smith: "By directing that industry in such a manner as may be of the greatest value, [the merchant] intends only his own gain, and he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention. Nor is it always the worse for society that is was no part of it" (Adam Smith, *Wealth of Nations*, 1776, p. 456).

The concept of 'Civil Economy' proposed at the same time of Smith's, offers a promising alternative approach. Antonio Genovesi was contemporary to Smith (Bruni and Sugden 2008). Put forth in Genovesi (1765-67), his vision of civil economy and public happiness claims: The economic principle is not self-interest but *mutual assistance* ("mutua assistenza"): "Not just any society of man with man be our case, not in the way as even beasts are to some extent sociable, but in a way founded upon reason, for which the members know their reciprocal rights and not only do they not think of violating them, but they even study ways to be benevolent and helpful to each other" (Genovesi 1765-67, II, X, § 11).

The Civil economy's idea of market seen as 'mutual assistance' makes the metaphor of the "invisible hand" somewhat less mysterious. Anyone who had the experience of teaching economic theory knows how surprised students typically react as they find themselves confronted, pretty much immediately, with the logic of market exchange. In people's mind a sort of mercantile fallacy seems to exist, which is more pervasive than ordinarily thought (or at least more than us economists ordinarily think). Such fallacy has various manifestations, that lie in the background of common-sense in the understanding of economic matters.

The Smithian idea of market is well expressed through the category of "mutual advantage" considered in strictly individual terms (nothing in Smith's thought suggests the existence of a collective subject, of a "we") and, from this point of view, Smith shares with the social contract tradition the idea that life in common is justified by reciprocal interest, by the mutual advantage of the single individuals taking part in the contract. Genovesi's view, aligned with the classic tradition and with Grotius, is instead characterized by the concept of "mutual assistance". We must observe, however, that the difference, small as it may appear, is in fact a decisive one. In an exchange motivated by "mutual advantage" each party benefits from the transaction, a transaction that is only possible as long as it is also beneficial to the other party. Hence, trading is *objectively* mutually advantageous: each party acts in a way that results advantageous to the other. Yet, as we have seen,

none of the two parties has any concern for the interests and well-being of the other, no "we" is required. Market exchange, intended à la Genovesi, as "mutual assistance", requires something more and different from the notion of mutual advantage.

The concept of "assistance" entails an intention, on the part of the person who "assists", to benefit the person "assisted". Assistance supposes an action that is intentionally directed towards another person for the purpose of helping her with her needs, an intention to be helpful to each other. If assistance is mutual – as Genovesi intends it – then these intentions are reciprocal. But mutual assistance is not played entirely in the field of contracts (despite not excluding it); in this perspective it stretches beyond the idea of mutual interest: a good society must be based on something deeper and different than just interests. The needs of some that do not always correspond to the interest of others, but those needs still ought to be satisfied in a decent society.

In this approach, cooperation is the nature and aim of the market, that allows market reach both individual and public happiness. We interpret our empirical results within this cultural tradition.

3. Cooperativeness, relational goods and our data

In this Section we accomplish two tasks. First, we present the theoretical and empirical foundations justifying why the extent of the cooperative sector may be held as a good proxy of the endowment of relational goods a country has. Second, we describe in detail the data to be used in our empirical analysis.

3.1 Why the extent of the cooperative sector is a good proxy of relational goods' endowment

The use of this proxy seems justified on two levels. First, theory suggests that, with respect to private limited companies, cooperative enterprises tend to rely more on long-term and informal/implicit (rather than short-term and formal) contracts. Hence, it is natural to expect that cooperatives will tend to flourish in countries where the endowment of relational capital is larger. Second, empirical cross-country data reveals a positive correlation between the extent of relational capital and the presence of cooperatives. We will tackle the theoretical and empirical argument in the order.

3.1.1 Some theoretical arguments

Here we provide a synthetic description of the idea that goes beyond the possible role of cooperation as a building block of social capital (Paldam, 2000). We propose that individuals' happiness may depend on their own perception of security, personal involvement and satisfaction

with the market economy. Individuals' participation and their feeling part of the economic game (relational goods) could then be an important determinant of the extent of happiness.

We show that the presence of cooperatives, taken as a proxy of how much a society is inclined to foster individuals' direct and face-to-face participation in the economy, is positively associated with the degree of happiness. Incidentally, this seems to confirm that, in order to account for the happiness/cooperative culture/market economy connection, we need a more socialized idea of the market, i.e. the so called "civil economy" approach.

Let's try to be more specific about the concept of cooperation. In this standard view of the market, cooperation comes as a sum of individual self-interested actions, without any "joint action", let alone any "mutuality" where the "common good" is intentional in both parties of the contract. The civil economy tradition (Bruni and Sugden 2008, 2013), instead, offers a different narrative of the market, where "mutuality" or the "common good" of the parties is part of the intentions of the agents: Relational goods are taken into account as both "consumption goods" (working together is a happier experience) and production goods: the productivity increases. Thus, in that sense, even though a larger endowment of trust may favor more cooperation (Jones and Kalmi, 2009), when cooperation becomes more widespread it can, in turn, reinforce trust and mutuality.

3.1.2 Some empirical evidence

As proxies of the endowment of relational capital in a country we may take two variables reported by the World Values Survey (WVS): i) the extent to which individuals believe friends are important, and ii) the degree to which individuals have confidence in charitable or humanitarian organizations.

We test whether there is a positive correlation between each of these two proxies and the extent of cooperatives across the European countries, where this latter variable is measured more precisely by Coopseurope (2010). Specifically, we measure the extent of cooperatives as the percentage share of population employed by cooperatives. The average cooperative employment share so defined is 0.731% with a median value at 0.846%, a maximum of 1.910% (in Italy) and a minimum of 0.055% (in Turkey) (Table 1). Regarding the importance of friends, we find an average of 35.9% with a median value at 35.7%, a maximum of 62.6% (in Sweden) and a minimum of 15.8% (in Slovenia). As to the confidence in charitable or humanitarian organizations, we find an average of 59.5% with a median value at 64.8%, a maximum of 75.3% (in the UK) and a minimum of 39.9% (in Slovenia). Table 1 also reports the correlation coefficients. It turns out that both relational capital proxies are positively correlated with the extent of cooperative employment. The importance of friends has a correlation of 0.5102, which is statistically significant at the 3% level of confidence. The

confidence in charitable or humanitarian organizations has a correlation of 0.5148, which is also statistically significant at the 3% level of confidence. Thus, there is some evidence that the extent of cooperative presence across countries is correlated with the degree of relational capital in the same countries.

Table 1. Cooperative employees vs. importance of friends and confidence in humanitarian bodies

	A	B	C
Country	Cooperative Employees	Friends important	Confidence humanitarians
Bulgaria	0.347	0.222	0.447
Finland	1.313	0.283	0.597
France	1.399	0.474	0.662
Germany	1.012	0.421	0.648
Hungary	0.854	0.250	N.A.
Italy	1.910	0.370	0.739
Moldova	0.258	0.256	0.434
Netherlands	1.116	0.454	0.493
Norway	0.886	0.583	0.704
Poland	1.049	0.287	0.655
Romania	0.160	0.214	0.537
Russian Federation	0.201	0.344	0.580
Serbia	0.089	0.218	0.489
Slovenia	0.169	0.158	0.399
Spain	0.839	0.289	0.649
Sweden	1.518	0.626	0.656
Switzerland	1.092	0.564	0.667
Turkey	0.055	0.372	0.654
Ukraine	0.141	0.384	0.551
United Kingdom	0.210	0.402	0.753
Mean	0.731	0.359	0.595
Median	0.846	0.357	0.648
Max	1.910	0.626	0.753
Min	0.055	0.158	0.399
Correlation (A, B)		0.5102	
Correlation (A, C)			0.5148

3.2 The data used in our empirical analysis

This Section also describes the data we use in the empirical analysis and offers some preliminary descriptive evidence.

The data on the degree of happiness is recovered from the World Values Survey (WVS). Specifically, given that our major constraint is the availability of data on cooperatives that is obtainable, as explained below, only for 2008 (ICA, 2011) and 2009 (Coopseurope, 2010), we take from WVS for each country the data point closest to those years.[2] The overall list considered includes 48 developed, emerging and developing countries: Australia, Austria (1999), Belarus (2000), Belgium (1999), Brazil, Bulgaria, Canada, China, Croatia (1999), Cyprus, Czech Republic

[2] When not otherwise specified by a year in parenthesis next to the country name, the data refer to 2009.

(1999), Denmark (1999), Estonia (1999), Finland, France, Germany (2010), Greece, Hungary (1999), India, Ireland (1999), Italy, Japan, South Korea, Latvia (1999), Lithuania (1999), Luxembourg (1999), Malaysia, Malta (1999), Moldova, the Netherlands, New Zealand, Norway, Poland, Portugal (1999), Romania, Russia, Serbia, Singapore (2002), Slovakia (1999), Slovenia (1999), Spain, Sweden, Switzerland, Taiwan, Turkey, Ukraine, the United Kingdom, USA.

Figure 1. Happiness and Cooperation in Europe: Employees

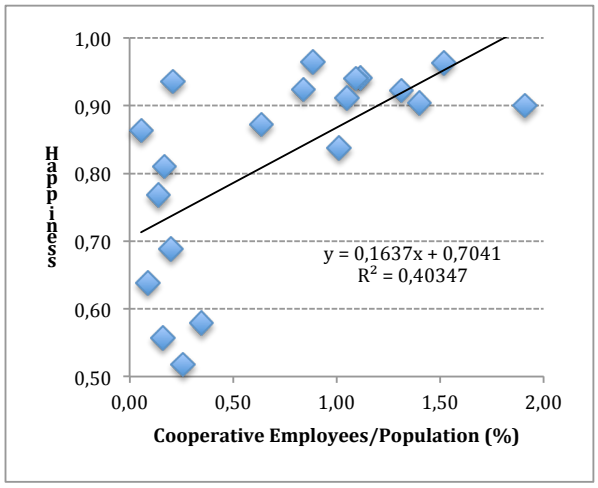


Figure 2. Happiness and Cooperation in Europe: Members

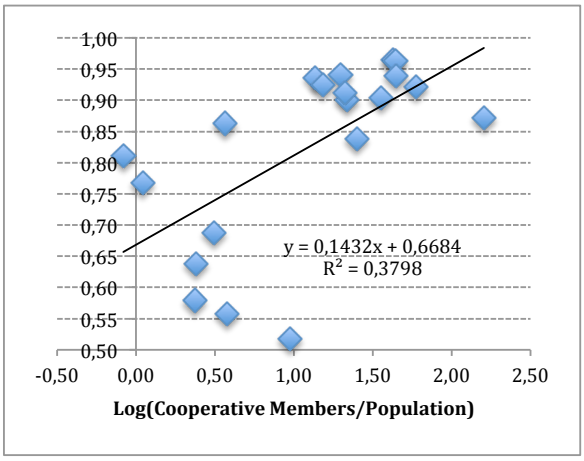
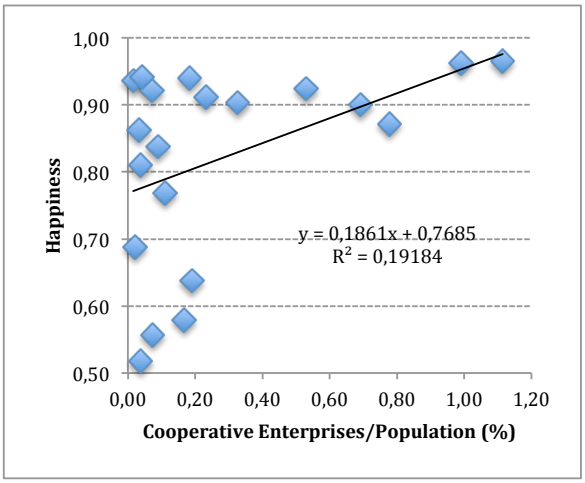


Figure 3. Happiness and Cooperation in Europe: Enterprises



Source: Coopseurope (2010). 20 countries included: Bulgaria, Cyprus, Finland, France, Germany, Great Britain, Italy, Moldova, Netherlands, Norway, Poland, Romania, Russia, Serbia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine.

As said in the introduction, for the cross-country extent of cooperativeness we rely on two different data sources: Coopseurope (2010) and ICA (2011). We take the data for the 36 European countries[3] from Coopseurope (2010), which refers to 2009 and reports for each country the number of

[3] Austria, Belarus, Belgium, Bulgaria, Croatia, Czech Republic, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Moldova, the Netherlands, Norway, Poland, Portugal, Romania, Russia, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, the United Kingdom.

cooperative enterprises, as well as of the attached employees and members. Our preferred measure of the extent of cooperativeness in a country is the number of employees attached to the national cooperative enterprises taken as a ratio to the countries' overall population.

A descriptive snapshot suggests the presence of some two-way correlation between the extent of cooperativeness and that of happiness in Europe. As shown in Figures 1, 2 and 3 – respectively, in terms of number of employees, members and enterprises, all taken as a ratio to the national population – there is a relatively strong correlation between the presence of cooperatives and the extent of happiness.

Figure 4. Happiness and Cooperation from the Global300

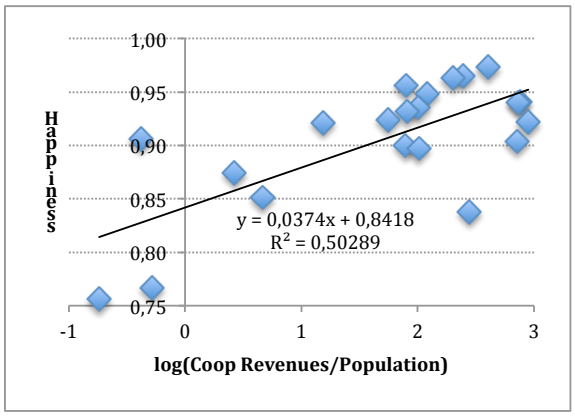
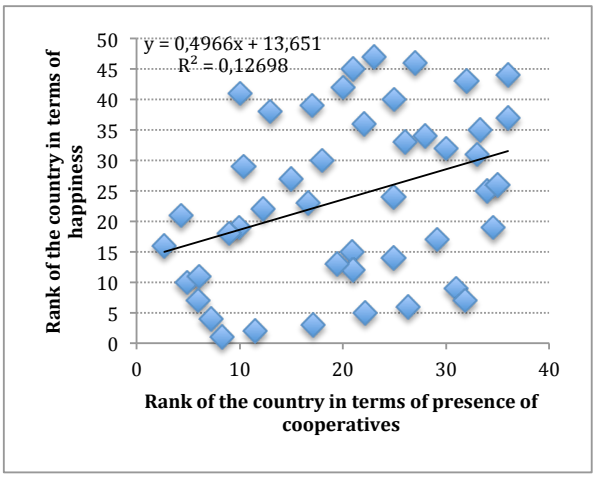


Figure 5. Rank of Happiness vs. Rank of Cooperative Presence



Source: Figure 4: from ICA (2011). 19 countries included: Australia, Brazil, Canada, China, Finland, France, Germany, India, Italy, Japan, Malaysia, Netherlands, New Zealand, Norway, Spain, Sweden, Switzerland, Taiwan, Turkey, Ukraine, UK, US. Our calculations based on the adjusted rankings from Coopseurope (2010) and ICA (2011). Figure 5: 47 countries included: Australia, Austria, Belarus, Belgium, Brazil, Bulgaria, Canada, China, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, India, Ireland, Italy, Japan, South Korea, Latvia, Lithuania, Luxembourg, Malaysia, Malta, Moldova, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Russia, Serbia, Singapore, Slovakia, Slovenia, Spain, Sweden, Switzerland, Taiwan, Turkey, Ukraine, UK, US.

The second data-source on cooperatives is ICA (2011) reporting data for 2008 on the total revenues of the largest 300 global cooperatives indicating also the country of establishment. The countries involved are 26.[4] Here our measure of the extent of cooperativeness in a country is given by the total revenues of cooperatives from that country in the Global 300 list scaled by population.

The descriptive statistics using data from the Global300 Report 2010 (ICA, 2011) reach results on a world level (Figure 4) that are qualitatively analogous to those presented above for Europe only. Namely, there is a positive correlation between happiness and cooperativeness.

The ICA data seem to offer the only opportunity to enlarge the number of countries included in our sample. However, we can have reservations on the reliability of the ICA-based measure. For

[4] Australia, Austria, Belgium, Brazil, Canada, China, Denmark, Finland, France, Germany, India, Ireland, Italy, Japan, South Korea, Malaysia, Netherlands, New Zealand, Norway, Singapore, Spain, Sweden, Switzerland, Taiwan, UK, US.

instance, a country populated by small cooperatives will be underrepresented due to the fact that only the 300 largest cooperatives are recorded. Thus, in order to reduce the bias due to possible measuring errors, we use the rank order rather than taking the raw data. Specifically, we take two ranks – one, among the European countries only, based on Coopseurope (2010) and the other based on ICA (2011) – and we come up with a mean adjusted rank (MAR).[5] The MAR plotted against the countries' happiness rank confirms the existence of a positive, albeit weaker, correlation (Figure 5).

Table 2 reports the basic descriptive statistics of all the variables employed in our econometric analysis. Depending on the specification, the dependent variable will be the extent of *Happiness* – i.e., the sum of two percentage values: that of the people who report themselves as 'very happy' and that of those who report being 'quite happy' – or the cross country rank of this variable (*Happyrank*). *Happiness* has a mean value of 83.515 spanning from the minimum of 51.700 (Moldova) to the maximum of 97.400 (New Zealand). Turning to the regressors, we have seven cooperative variables. The first three are derived from Coopseurope (2010) and refer to the mentioned 36 European countries. *Coop_empl* is the ratio of cooperative employees to total population: its average value is 0.612% ranging from the minimum of 0.02% (Latvia) to the maximum of 1.91% (Italy). *Coop_ent* is the ratio of the number of cooperative enterprises (multiplied by 1,000) to total population with an average value of 0.261, a minimum of 0.010 (Belarus) and a maximum of 1.200 (Estonia). *Coop_mem* is the ratio of the number of cooperative members to total population: its mean value is 21.017% spanning from the minimum of 0.520% (Croatia) to the maximum of 160.120% (Cyprus). In turn, *Coop_rev* is derived from ICA (2011) as the total revenues of the cooperatives in the list of the Global 300 multiplied by 1,000 and scaled by the country's total population. Next, *Coopr* is the MAR – the mean adjusted rank as described above. Finally, we introduce three interaction variables defined as *Coop_hdi* (*Coopr* multiplied by *Hdir*), *Coop_gdp* (*Coopr* multiplied by *Gdpr*) and *Coop_days* (*Coopr* multiplied by *Days_bus*, the number of days needed to start a business in the country). *Coop_hdi* – or, alternatively, *Coop_gdp* – is included to test whether the relationship between cooperativeness and happiness differs between more and less affluent countries. A negative and significant coefficient of *Coop_hdi* would suggest that, indeed, cooperativeness could offer a way out of the Easterlin's paradox. Given that we interpret *Days_bus* as – inversely – proxying the extent of the market economy, a positive and

[5] To make it comparable to the Coopseurope rank, that is based on 36 countries, we need to adjust the ICA rank because it refers to 26 countries. The adjustment consists in rescaling the ICA rank multiplying it by 26/36 or 0.7222. Then the mean adjusted rank (MAR) is the average of the adjusted-ICA rank for the European countries for which we have observations both from ICA and Coopseurope. Alternatively, the MAR is either simply the adjusted-ICA rank for the non-European countries observed in ICA or simply the Coopseurope rank for the European countries for which we have no observations from ICA.

significant coefficient of *Coop_days* would suggest that more cooperation translates into relatively more happiness in more market-oriented economies.

Table 2. Summary statistics

Variables	Number of Observations	Mean	Standard Deviation	Min	Max
Dependent Variables					
Happiness (people very or quite happy, %) [a]	48	83.515	12.384	51.700	97.400
Happyrank (happiness rank of the country) [a]	48	24.438	14.032	1	48
Cooperativeness variables					
Coop_empl (coop employees/population, %) [b]	36	0.612	0.517	0.020	1.910
Coop_ent (coop enterpr./population, *1,000) [b]	36	0.261	0.321	.010	1.200
Coop_mem (coop members/population, %) [b]	36	21.017	29.149	0.520	160.120
Coop_rev (coop revenues/population, *1,000) [c]	26	2370.181	3116.893	1.800	12427.800
Coopr (cooperativeness rank of the country) [b c]	48	24.541	14.036	1	48
Coop_hdi (interaction of Coopr, Hdir) [b c d]	48	690.563	634.730	12	2304
Coop_gdp (interaction of Coopr, Gdp_pc) [b c e]	48	686.250	632.001	13	2304
Coop_days (interaction Coopr, Coop_days) [b c d]	48	438.281	515.901	3.5	2440
Control variables					
Hdi (2010 HDI) [d]	48	0.814	0.086	0.519	0.938
Hdir (rank of the country for 2010 HDI) [d]	48	24.479	13.982	1	48
Gdp_pc (2010 per capita GDP) [e]	48	26422.460	14501.990	2953	81683
Gdpr (rank of the country for 2010 Gdp_pc) [e]	48	24.500	14.000	1	48
Days_bus (No. days to start a business) [d]	48	16.979	18.834	0.5	122
Daysr (2010 Days_bus rank of the country) [d]	48	24.063	13.820	1	48
Pop_density (per km^2) [d]	48	320.854	1093.897	3	7589
Urban_pop (percentage on total population) [d]	47	73.149	14.357	32	100
GovDebt_GDP (percentage) [d]	48	54.708	33.643	9	175
Unemp_rate (unemployment rate, %) [d]	48	8.842	4.618	1.000	19.800
Inflation (%)[d]	48	2.938	2.698	-1.094	11.992
Religion_fractionalization [f]	47	0.459	0.221	0.005	0.824
Legor_uk^ (legal origin UK) [g]	48	0.208	0.410	0	1
Legor_fr^ (legal origin France) [g]	48	0.354	0.483	0	1
Legor_ge^ (legal origin Germany) [g]	48	0.354	0.483	0	1
Legor_sc^ (legal origin Scandinavia) [g]	48	0.083	0.279	0	1
Instrumental variables					
Population (millions) [d]	48	87.093	259.344	0.410	1349.590
Gini index [h]	47	31.549	5.551	22.260	47.260
Gini_rank [h]	48	24.5	14	1	48
Ethnic_fractionalization [f]	47	0.278	0.192	0.002	0.712
Language_fractionalization [f]	47	0.275	0.211	0.002	0.807

Note: ^ denotes a (0, 1) dummy variable; sources of the data: [a] = WVS; [b] = Coopseurope (2010); [c] = ICA (2011); [d] = World Bank; [e] = WPT (2010); [f] = Alesina et al. (2003); [g] = La Porta et al. (1998); [h] = SWIID database (Solt, 2009).

Regarding the control variables we include a variable designed to capture the degree of economic affluence of the country. The most important control variable is to us the Human Development Index (*Hdi*) developed and promoted by the United Nations (United Nations Development Programme, 1998). In 2010 in our sample, *Hdi* has a mean of 0.814, with a minimum of 0.519

(India) and a maximum of 0.938 (Norway). Indeed, some scholars (e.g., Vemuri and Costanza, 2006) find that *Hdi* – together with an index of the value of ecosystem services per km^2 (as a proxy for natural capital) – can explain 72% of the cross-country variation in life satisfaction. In theory, the introduction of *Hdi* as the main control variable in our regression rules out considering also GDP per capita (*Gdp_pc*) since, as is known, *Hdi* includes *Gdp_pc* as one of its sub-components. However, as some scholars show skepticism on whether other welfare measures actually outperform *Gdp_pc* in their relationship to happiness (e.g., Delhey and Kroll, 2012), in some specifications we replace *Hdi* with per capita *Gdp_pc*. In 2010 in our sample, *Gdp_pc* has a mean of $26,422 varying between a minimum of $2,953 (India) and a maximum of $81,683 (Luxembourg). To conform to the rank calculation of *Coopr*, both *Hdir* and *Gdpr* are calculated as the respective rank variables.

The other control variables include the number of days to start a business in the country (*Days_bus* and the respective rank *Daysr*) that may be taken as a proxy of the ease of doing business and, thus, of the extent of the formal market economy.[6] *Days_bus* has a mean of 17 days, from a minimum of half a day (New Zealand) and a maximum of 122 days (Brazil). Then, two explanatory variables relate to population: *Pop_density* (population density per km^2), and *Urban_pop* (the percentage of urban population on the total). These demographic variables capture the depth of the domestic market that may favor trade and growth. That will be the case of increasing urban agglomeration (*Urban_pop*) and growing *Pop_density* if the benefits of agglomeration are not overwhelmed by congestion costs (Krugman, 1995). *Pop_density* is on average 321 escalating from the minimum of 3 (Australia) to a maximum of 7,589 (Singapore). The average of 73% for *Urban_pop* is achieved between the minimum of 32% (India) and the maximum of 100% (Singapore).

In turn, three other variables aim to encapsulate how its macroeconomic fundamentals might affect a country's happiness. The government debt to GDP ratio (*Govdebt_GDP*) could imply either higher taxes or toil and, thus, likely depress happiness. This variable has a mean of 54.7% ranging from a minimum of 9% (Estonia) to a maximum of 175% (Japan). Unemployment (*Unemp_rate*) can also dampen happiness. In our sample, *Unemp_rate* varies from a minimum of 1% (Belarus) to a maximum of 19.8% (Spain) and is 8.8% at the mean. Finally, Inflation can also impinge negatively on happiness by imposing an opaque and regressive tax on the people at large. In our

[6] Following the influential paper by Djankov et al. (2002), the World Bank compiles data on the various dimensions of the ease of doing business. Unfortunately, the composite index is only available from 2013 onwards and we had to rely on its sub-components. We selected the two most prominent indicators: "days to start up a business" and "number of procedures to start up a business". As expected, the two are strongly correlated (their pairwise correlation is 0.626, significant at the 1%) and, after checking that the latter turned out insignificant in our regressions, we selected the former.

data, Inflation is 2.9% at the mean, varying between the minimum of -1.1% (Latvia) and the maximum of 12.0% (India).

We have five other control variables. First, religion can affect the extent of happiness. Specifically, various authors have shown that increasing religious fractionalization (*Relig_fract*) impinges negatively on happiness (Mookerjee and Beron, 2005). In our countries, the mean value of *Relig_fract* is 0.459 spanning from the minimum of 0.005 (Turkey) to the maximum of 0.824 (USA). The other four regressors are dummy variables capturing the legal origin of the country, where one might conjecture that more efficient legal systems could make people happier. In particular, drawing on La Porta et al. (1998), the countries' legal systems are classified as either derived either from English origin (*Legor_uk*) or from French origin (*Legor_fr*) or from German origin (*Legor_ge*) or from Scandinavian origin (*Legor_sc*). As shown by the means, in our sample of countries *Legor_fr* and *Legor_ge* are equally represented (35.4% of the countries each), *Legor_uk* regards 20.8% of the countries, while the remaining 8.3% are *Legor_sc*.

Finally, Table 2 reports descriptive statistics also for the four instrumental variables that we will better justify later. *Population* (in millions) captures the size of the country that, on its own, can affect the size of the domestic market. It ranges from the minimum of 0.41 million (Malta) to a maximum of 1,349 millions (China) and has a mean of 87 millions. The *Gini* index (and the related rank variable *Ginir*) of income inequality has a mean of 31.6 and ranging from the minimum of 22.3 (Sweden) to the maximum of 47.3 (Brazil). The *Ethnic_fractionalization* (*Ethnic_fract*) index has a mean of 0.278, a minimum of 0.002 (South Korea) and a maximum of 0.712 (Canada). Last but not least, the *Language_fractionalization* (*Lang_fract*) is 0.275 at the mean and varies between the minimum of 0.002 (South Korea) and the maximum of 0.807 (India).

Table 3 in the Appendix reports the pairwise correlation coefficients among the main variables of interest. It reveals that those significantly correlated with *Happiness* are: *Coop_empl* (0.480), *Coopr* (-0.3715), *Hdi* (0.616), *Gdp_pc* (0.649), *Urban_pop* (0.602), *Govdebt_gdp* (0.356), *Unemp_rat* (-0.360), *Inflation* (-0.418), *Legor_uk* (0.357), *Legor_ge* (-0.301).

4. Empirical analysis

The econometric analysis explores whether the bilateral correlation between happiness and cooperativeness highlighted by the descriptive evidence stands up to the inclusion of control variables. In addition, we have to deal with two further issues – reverse causality and potential endogeneity – as well as checking whether the results pass a few robustness checks.

4.1 Basic OLS regression

The basic regression specification that we estimate is the following:

$$happyrank_i = \alpha + \beta_1 hdir_i + \beta_2 coopr_i + \beta_3 coop\_hdi_i + \beta_4 coop\_days_i + \beta_5 pop\_density_i + \beta_6 urban\_pop_i + \beta_7 relig\_fract_i + \beta_8 days\_bus_i + \beta_9 govdebt\_gdp_i + \beta_{10} unemp\_rat_i + \beta_{11} inflation_i + \beta_{12} legor\_fr_i + \beta_{13} legor\_ge_i + \beta_{14} legor\_sc_i + \varepsilon_i \quad [1]$$

where, for any country *i*, the regressors are as described and justified above. As said, the interaction terms *coop-hdi*$_i$ and *coop-days*$_i$ have been included to check whether cooperativeness has differential impact on happiness in more vs. less affluent countries and in more vs. less market oriented economies. We must remind that the dependent is a rank variable – where higher values mean less happiness – implying that a positive coefficient for a rank explanatory variable can be interpreted as usual. On the contrary, when the explanatory variable is in levels a positive coefficient means that this variable depresses happiness.

We estimate equation [1] by Ordinary Least Squares (OLS) with robust standard errors to rule out any bias coming from heteroskedasticity.

From the results (Table 4) we notice that: i) all the specifications are good statistical models as the *F test* strongly rejects the null hypothesis that all the coefficients of the regressors are jointly zero; ii) regressions achieve good fit being able to account for above 80% of the variability in *happyrank*; iii) *hdir* is confirmed to be significantly and positively linked to happiness; iv) in spite of controlling for *hdir*, *coopr* is also positively and significantly related to *happyrank* implying that more cooperativeness associates with more happiness; v) as expected, the cooperativeness-happiness relationship differs between more and less affluent countries, and specifically is somewhat stronger in countries with higher HDI, as revealed by the negative sign and the statistical significance of *coop-hdi*; vi) also *coop_days* is negative and significant, suggesting that the effect of cooperativeness on happiness is stronger in more market oriented economies.

The signs of the other independent variables are generally as expected. *Urban_pop* raises happiness, possibly because of its pro-growth effect. *Relig_fract* systematically worsens happiness while *Days_bus* improves it. A worsening in any of the macro fundamental variables has detrimental effects, confirming that people dislike high *Govdebt_gdp*, high *Unemp_rate* and high *Inflation*. While *Legor_uk* is the omitted legal origin variable, all the other three turn out strongly significant and positive. So, legal systems other than the English origin ones associate with lower happiness.

4.2 *Instrumental Variable regression*

Now we tackle reverse causality and endogeneity. Reverse causality refers to the possibility that it is not cooperativeness to 'cause' happiness but the reverse is true. In other words, people would not be happier because they cooperate more but people would cooperate more because they are happier. And, obviously, this would beg the question of why some people are happier than others to start with. To be sure, the issue of potential endogeneity comes up exactly at this point and, thus, solving endogeneity means also discarding reverse causality.

Table 4. OLS estimation with robust standard errors

VARIABLES	(1) OLS Happyrank	(2) OLS Happyrank	(3) OLS Happyrank	(4) OLS Happyrank (with Gdpr)	(5) OLS Happyrank (bootstrap)
Hdir	0.832***	0.820***	0.713***	-	0.769***
	(0.174)	(0.165)	(0.180)		(0.209)
Gdpr	-	-	-	0.589***	-
				(0.175)	
Coopr	0.426***	0.414***	0.517***	0.429***	0.489***
	(0.135)	(0.131)	(0.126)	(0.147)	(0.184)
Coop_hdi	-0.019***	-0.019***	-0.014***	-	-0.014**
	(0.005)	(0.005)	(0.005)		(0.007)
Coop_gdp	-	-	-	-0.010*	-
				(0.005)	
Coop_days	0.013*	0.013*	-	-	-
	(0.007)	(0.007)			
Pop_density	-0.001	-	-	-	-
	(0.001)				
Urban_pop	-0.289***	-0.306***	-0.316***	-0.312**	-0.350***
	(0.093)	(0.086)	(0.101)	(0.128)	(0.113)
Relig_fract	20.417***	20.346***	21.264***	15.445*	16.352**
	(5.983)	(5.872)	(6.979)	(8.541)	(7.248)
Days_bus	-0.460***	-0.466***	-0.178***	-0.157***	-0.177**
	(0.149)	(0.144)	(0.043)	(0.042)	(0.089)
Govdebt_gdp	0.066**	0.063*	0.069**	0.060*	-
	(0.032)	(0.032)	(0.030)	(0.030)	
Unemp_rat	0.592*	0.619*	0.529*	0.403	-
	(0.331)	(0.314)	(0.292)	(0.311)	
Inflation	1.114*	1.134**	1.036*	1.048	-
	(0.593)	(0.550)	(0.598)	(0.627)	
Legor_fr	15.747***	16.013***	16.936***	15.998***	16.773***
	(3.390)	(3.224)	(3.423)	(4.490)	(4.153)
Legor_ge	17.728***	17.885***	18.076***	17.924***	15.708***
	(3.089)	(2.944)	(3.034)	(4.002)	(3.743)
Legor_sc	16.724***	16.906***	17.749***	15.422**	12.735**
	(4.891)	(4.840)	(5.143)	(7.154)	(5.660)
Constant	-4.541	-3.139	-4.721	1.830	11.614
	(10.271)	(9.821)	(9.929)	(9.648)	(10.768)
Observations	47	47	47	47	47
R-squared	0.852	0.851	0.835	0.817	0.749
F test	35.150***	28.820***	27.520***	24.700***	27.520***
Wald Chi^2					184.070***

Note: The table reports regressions coefficients. The dependent variable and the estimation method are reported at the top of each column. In parentheses are robust standard errors. (*): coefficient significant at 10% confidence level; (**): coefficient significant at 5% confidence level; (***): coefficient significant at less than 1% confidence level. The F test (the Wald Chi^2 test in the bootstrap regression) tests whether the hypothesis that all the included regressor coefficients are jointly zero can be rejected (*: at 10%; **: at 5%; ***: at 1% level of significance).

There would be endogeneity if our regression were to include happiness (our dependent variable) and cooperativeness (the explanatory variable in which we are most interested) but a third variable, omitted in the regression were the 'true' cause of both the extent of happiness and the degree of cooperativeness. Following the mainstream method to deal with endogeneity (Wooldridge, 2002), we will use an instrumental variables approach. Namely, a good candidate instrument is a variable that is correlated with cooperativeness but is not related to happiness. Then, the inclusion of the instrument in the regression allows to 'clean' the endogeneity and we can truly test whether cooperativeness is really related 'of its own' to happiness.

We can get an idea about the variables that are best candidates to play the role of instruments by inspecting again Table 3. Following a widespread literature, we consider as potential instruments: i) fractionalization (Alesina et al., 2003); ii) legal origin (La Porta et al., 1998); iii) *Gini* index[7] – taken from the SWIID database (Solt, 2009). Exploring the correlation matrix in Table 3, we notice that, with the only exception of the Scandinavian legal origin dummy (*legor_sc*), the legal origin variables are never significantly correlated with *coopr* and are sometimes correlated with *happyrank*. This explains why we excluded these variables as instruments and included them as ordinary regressors. Among the fractionalization variables, *Relig_fract* is correlated neither with *coopr* nor with *happyrank*; while the other two (*Ethnic_frac* and *Lang_fract*) are significantly correlated with *coopr* but not with *happiness*. So, we can include these two latter variables among our potential instruments while *Relig_fract* was inserted as a control variable. The Gini index is also included among the instruments as it denotes a significant correlation with *coopr* but not with *happiness*. Finally, the last instrument is *Population*,[8] a variable that shows strong correlation with *coopr* and no correlation with *Happiness*.

The instrumental variable approach can be represented as follows:

$$happyrank = \alpha_1 x + z_1 \delta_{11} + u \qquad [2]$$

where *happyrank* is as before. Considering the interpretation of the instrumental variables given by Two Stages Least Squares (2SLS), we first define a vector of instrumental variables z_2 correlated with the endogenous explanatory variable x, but uncorrelated with the stochastic error u in regression (2). In our model, as said, the instruments in this vector are: *Ethnic_fract*, *Lang_fract*,

[7] Two papers recently using the Gini index as an instrument in different contexts are Aizenman and Jinjarak (2012) and Tabellini (2012).

[8] A recent paper using population as an instrument is Rose (2013).

the *ginirank*, and *Population*. The effect of these instrumental variables is captured by the vector of parameters δ_{22} in the auxiliary regression:

$$x = z_1\delta_{21} + z_2\delta_{22} + v, \qquad [3]$$

where x is the endogenous explanatory variable in (2), z_1 is the vector of control variables in (2) and v is the residual. After estimating regression (3) at the first stage, x is replaced by its estimated values in regression (2). This last equation is then estimated at the second stage.

The results of the 2SLS-IV estimation are reported in columns 1 and 2 of Table 5. The appropriateness of the statistical model (*F test*) and the goodness of the fit (R^2 *statistic*) still attain. Analogously, *Hdir* remains a significant determinant of *Happyrank*, its coefficient value and significance level are unchanged. The significance and coefficient value of *Coopr* are also confirmed as well as the fact that the positive impact of cooperativeness on happiness is stronger for more affluent (market oriented) countries, as shown by the negative (positive) and significant coefficient of *Coop_hdi* (*Coop_days*).

The Hansen J statistic (overidentification test of all instruments) tells us that the hypothesis of independence of the instruments and the disturbance process is not called into question given that the J test null hypothesis is not rejected at the usual confidence levels.

Column 3 of Table 4 addresses the issue of joint irrelevance of the identified instruments. First we report the ancillary OLS regression where *Coopr* is regressed on the four instruments and on the other independent variables. Then we perform an F test of the hypothesis of joint irrelevance of the four instruments. The hypothesis is rejected at a comfortable level of significance.

4.3 *Robustness checks*

To verify the validity of our results we perform various robustness checks. First of all, in the OLS regressions we fit specifications where we exclude *Coop_days* (Table 4, column 3) and replace *Hdir* and *Coop_hdi* with *Gdpr* and *Coop_gdp* (Table 4, column 4). In both cases the results remain qualitatively unchanged. Next, a more parsimonious specification – where from the regressors of Table 4, column 3 we exclude also *Govdebt_gdp*, *Unemp_rate*, and *Inflation* – passes the scrutiny of the boostrap method with 500 Montecarlo replications (Table 4, column 5).

Also in the 2SLS-IV estimations dropping *Coop_days* does not change the results (Table 5, column 4). Furthermore, even excluding *Coop_hdi* (Table 5, column 5) *Coopr* remains positive and significant, though only a the 10% level.

Table 5. 2SLS-IV estimation with robust standard errors

VARIABLES	(1) 2SLS-IV Happyrank	(2) 2SLS-IV Happyrank	(3) OLS Coopr (ancillary regression)	(4) 2SLS-IV Happyrank	(5) 2SLS-IV Happyrank
Hdir	0.832***	0.820***	0.183	0.713***	0.346***
	(0.144)	(0.138)	(0.283)	(0.153)	(0.120)
Coopr	0.426***	0.414***	-	0.517***	0.156*
	(0.111)	(0.110)		(0.107)	(0.084)
Coop_hdi	-0.019***	-0.019***	-	-0.014***	-
	(0.004)	(0.004)		(0.004)	
Coop_days	0.013**	0.013**	-	-	-
	(0.006)	(0.005)			
Pop_density	-0.001	-	-	-	-
	(0.001)				
Urban_pop	-0.289***	-0.306***	0.281	-0.316***	-0.250***
	(0.077)	(0.072)	(0.185)	(0.086)	(0.089)
Relig_fract	20.417***	20.346***	-25.123**	21.264***	19.072***
	(4.937)	(4.920)	(11.802)	(5.936)	(6.078)
Days_bus	-0.460***	-0.466***	-0.090	-0.178***	-0.169***
	(0.123)	(0.121)	(0.091)	(0.036)	(0.040)
Govdebt_gdp	0.066**	0.063**	-0.081	0.066**	0.059**
	(0.026)	(0.027)	(0.059)	(0.026)	(0.026)
Unemp_rat	0.592**	0.619**	0.451	0.529**	0.549**
	(0.273)	(0.263)	(0.506)	(0.249)	(0.275)
Inflation	1.114**	1.134**	0.150	1.036**	1.061*
	(0.489)	(0.461)	(0.972)	(0.509)	(0.587)
Legor_fr	15.747***	16.013***	-5.453	16.936***	16.264***
	(2.797)	(2.701)	(5.980)	(2.912)	(3.106)
Legor_ge	17.728***	17.885***	-1.337	18.076***	18.977***
	(2.549)	(2.467)	(7.162)	(2.580)	(2.722)
Legor_sc	16.724***	16.906***	-19.831*	17.749***	13.630***
	(4.036)	(4.055)	(10.113)	(4.374)	(4.657)
Ginirank	-	-	-0.328	-	-
			(0.223)		
Ethnic_fract	-	-	1.944	-	-
			(16.070)		
Language_fract	-	-	9.771	-	-
			(15.519)		
Population	-	-	0.014**	-	-
			(0.007)		
Constant	-4.541	-3.139	20.004	-4.721	-0.263
	(8.475)	(8.230)	(22.042)	(8.445)	(9.166)
Observations	47	47	47	47	47
Centered R-squared	0.852	0.851	0.516	0.835	0.808
F test	35.150***	28.820***	11.200***	27.520***	17.270***
J overidentification test	5.491	5.511		4.331	4.908
F test instr. irrelevance	-	-	4.500***	-	-

Note: The table reports regressions coefficients. The dependent variable and the estimation method are reported at the top of each column. In parentheses are robust standard errors. (*): coefficient significant at 10% confidence level; (**): coefficient significant at 5% confidence level; (***): coefficient significant at less than 1% confidence level. The F test tests whether the hypothesis that all the included regressor coefficients are jointly zero can be rejected (*: at 10%; **: at 5%; ***: at 1% level of significance). The J overidentification test tests whether the hypothesis of independence of the instruments and the disturbance process is called into question (insignificance means acceptance). The F test for instrument irrelevance tests whether, on the basis of the ancillary regression, the hypothesis of irrelevance may be rejected (significance means rejection).

Results are further confirmed even replacing the OLS estimation with an Ordered Probit estimation technique, something that could be suggested by the ordinal nature of *Happyrank*, *Coopr*, *Hdir* and of the interaction variables. All the previous results are substantially confirmed (Table 6).

Table 6. Ordered Probit estimation with robust standard errors

VARIABLES	(1) Ordered Probit Happyrank	(2) Ordered Probit Happyrank	(3) Ordered Probit Happyrank	(4) Ordered Probit Happyrank	(5) Ordered Probit Happyrank (with Gdpr)
Hdir	0.185***	0.164***	0.175***	0.172***	-
	(0.035)	(0.034)	(0.033)	(0.032)	
Gdpr	-	-	-	-	0.116***
					(0.028)
Coopr	0.108***	0.120***	0.118***	0.120***	0.083***
	(0.031)	(0.028)	(0.028)	(0.028)	(0.025)
Coop_hdi	-0.004***	-0.003***	-0.003***	-0.003***	-
	(0.001)	(0.001)	(0.001)	(0.001)	
Coop_gdp	-	-	-	-	-0.002**
					(0.001)
Coop_days	0.002	-	-	-	-
	(0.001)				
Pop_density	-0.001	-	-	-	-
	(0.000)				
Urban_pop	-0.067***	-0.070***	-0.073***	-0.077***	-0.069***
	(0.019)	(0.020)	(0.020)	(0.019)	(0.020)
Relig_fract	4.608***	4.590***	4.519***	4.347***	2.700**
	(1.076)	(1.191)	(1.097)	(1.118)	(1.117)
Days_bus	-0.079***	-0.035***	-0.036***	-0.035***	-0.026***
	(0.027)	(0.007)	(0.007)	(0.007)	(0.006)
Govdebt_gdp	0.015***	0.014***	0.012**	0.013**	0.009*
	(0.006)	(0.005)	(0.005)	(0.006)	(0.005)
Unemp_rat	0.089	0.071	0.038	-	-
	(0.055)	(0.046)	(0.039)		
Inflation	0.180*	0.151	-	-	-
	(0.101)	(0.099)			
Legor_fr	3.585***	3.661***	3.634***	3.711***	3.031***
	(0.715)	(0.707)	(0.706)	(0.683)	(0.749)
Legor_ge	3.512***	3.383***	3.014***	3.059***	2.640***
	(0.564)	(0.537)	(0.514)	(0.503)	(0.627)
Legor_sc	3.842***	3.886***	3.747***	3.692***	2.761**
	(0.976)	(0.983)	(0.932)	(0.968)	(1.124)
Observations	47	47	47	47	47
Pseudo R-squared	0.279	0.248	0.240	0.238	0.202

Note: The table reports regressions coefficients. The dependent variable and the estimation method are reported at the top of each column. In parentheses are robust standard errors. (*): coefficient significant at 10% confidence level; (**): coefficient significant at 5% confidence level; (***): coefficient significant at less than 1% confidence level.

Finally, one could worry that our results depend on some composition effects that might have been introduced when calculating the mean adjusted rank (MAR) at the basis of *Coopr*. As a robustness check to this possible objection we run OLS and 2SLS-IV estimations on the sub-sample of European countries for which – thanks to the information from Coopsuerope (2010) – we have uniform and more precisely measured data on cooperativeness, i.e. the extent of cooperative

employees (*Coop_empl*). Also in this case the results (Table 7) are qualitatively confirmed after recalling that, since now we are considering the variables in levels and not in their rank, the expected sign for the variables that were previously measured in levels should be changed.

Table 7. OLS and 2SLS-IV estimations with robust standard errors for European countries

VARIABLES	(1) OLS Happy	(2) OLS Happy (with Gdpr)	(3) 2SLS-IV Happy	(4) 2SLS-IV Happy (with Gdpr)
Hdi	0.771**	-	0.771***	-
	(0.319)		(0.275)	
Gdp	-	0.000**	-	0.000**
		(0.000)		(0.000)
Coop_empl	0.078**	0.101***	0.078***	0.101***
	(0.029)	(0.028)	(0.025)	(0.024)
Urban_pop	0.003*	0.003**	0.003**	0.003**
	(0.002)	(0.001)	(0.001)	(0.001)
Relig_fract	-0.192**	-0.181**	-0.192**	-0.181**
	(0.089)	(0.082)	(0.077)	(0.071)
Days_bus	0.002	0.002*	0.002*	0.002**
	(0.001)	(0.001)	(0.001)	(0.001)
Legor_fr	-0.112**	-0.130***	-0.112***	-0.130***
	(0.040)	(0.042)	(0.035)	(0.036)
Legor_ge	-0.121***	-0.123***	-0.121***	-0.123***
	(0.036)	(0.043)	(0.031)	(0.037)
Legor_sc	-0.144***	-0.148***	-0.144***	-0.148***
	(0.045)	(0.046)	(0.039)	(0.040)
Constant	0.091	0.613***	0.091	0.613***
	(0.226)	(0.096)	(0.195)	(0.096)
Observations	35	35	35	35
R-squared	0.748	0.746	0.748	0.746
F test	13.870***	12.030***	13.870***	12.030***
J overidentification test	-	-	0.873	1.944
F test instr. irrelevance	-	-	4.150**	6.400***

Note: The table reports regressions coefficients. The dependent variable and the estimation method are reported at the top of each column. In parentheses are robust standard errors. (*): coefficient significant at 10% confidence level; (**): coefficient significant at 5% confidence level; (***): coefficient significant at less than 1% confidence level. The F test tests whether the hypothesis that all the included regressor coefficients are jointly zero can be rejected (*: at 10%; **: at 5%; ***: at 1% level of significance). The J overidentification test tests whether the hypothesis of independence of the instruments and the disturbance process is called into question (insignificance means acceptance). The F test for instrument irrelevance tests whether, on the basis of the ancillary regression, the hypothesis of irrelevance may be rejected (significance means rejection).

To conclude, there seems to be a genuine positive cross-country effect of the extent of cooperativeness on the degree of happiness. And this effect is stronger in more affluent countries vis-à-vis less developed ones. Therefore, it appears that indeed relational capital, as proxied by the extent of cooperativeness, can help solve Easterlin's paradox.

5. Conclusions

With the aim to address Easterlin's paradox, we hypothesized that there might be a positive link between the extent to which peoples cooperate in their economic dimension and the degree to which

peoples feel happy. Our conjecture is that when a country hosts more economic cooperation its people will be able to build a larger relationship capital. In turn, beside fostering trust, that larger relationship capital will likely enhance happiness.

Our hypothesis is consistent with the theory of the Civil economy developed by Antonio Genovesi (1765) and recently revived by a growing strand of literature. In that view, mutuality means 'mutual assistance' among social agents, something rather different than the individualistic-motivated 'mutual advantage' of Genovesi's contemporary Adam Smith. Thus, in the Civil economy tradition mutuality or the "common good" of the parties is part of the intentions of the agents: Relational goods are taken into account as both "consumption goods" (working together is a happier experience) and production goods: the productivity increases.

We searched for validation of our hypothesis by testing whether there is a positive cross-country link between the extent of cooperativeness and the degree of happiness. To accomplish this task we had to scout for data difficult to come up with on the presence of cooperative enterprises. To reach a sample of almost 50 countries on which to conduct the regression analysis, we had to put together information coming from different sources and obtained with different methods. In order to limit the potential distortion due to measurement errors, we refrained from using the raw data and opted for focusing the econometric analysis on rank variables.

Though the evidence of a positive cross-country link between cooperativeness and happiness was relatively clear in the descriptive analysis and in the OLS regression, we had to find some valid instrumental variables to address the issue of potential endogeneity between cooperativeness and happiness. The two-stage instrumental variables approach provided qualitative confirmation of the results obtained in the OLS estimations. To conclude, even though additional refinements and robustness checks could strengthen our test, we can claim that there seems to be a positive link between cooperativeness and happiness.

Further work is needed. Besides providing confirmation of our results in wider databases, it would be particularly desirable to investigate whether the nexus between cooperativeness and happiness is direct or whether it is conveyed through some transmission channels like trust and relational capital. On one hand, a normative prescription is that national and supranational statistical agencies should strive harder to collect data on the presence of cooperative enterprises. On the other hand, however, on positive grounds we can doubt that significant progress in that respect will be achieved shortly. Hence, given that the paucity of data available to this task might be persistent, the research agenda on how cooperativeness and happiness interact could need to benefit from the experimental approach.

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Appendix - Table 3 (*)

	happy	coop_empl	hdi2010	gdp_pc	days_bus	pop~n	pop_dens	urban_pop	govdebt_gdp	unemp_rat	inflation	relig_fract	ethnic_fract	lang_fract	legor_uk	legor_fr	legor_ge	legor_sc	gini	coopr
happy	1																			
coop_empl	0.4804	1																		
	0.0030																			
hdi2010	0.6162	0.5099	1																	
	0.0000	**0.0015**																		
gdp_pc	0.6495	0.2911	0.7492	1																
	0.0000	*0.0850*	**0.0000**																	
days_bus	0.0218	-0.0947	-0.3365	-0.2855	1															
	0.8829	0.5827	**0.0194**	**0.0492**																
pop~n	-0.0875	0.0867	-0.5284	-0.3076	0.2533	1														
	0.5544	0.6152	**0.0001**	**0.0334**	*0.0823*															
pop_dens	0.1601	-0.1137	0.0626	0.2284	-0.0962	-0.0294	1													
	0.2772	0.5091	0.6723	0.1184	0.5153	0.8429														
urban_pop	0.6017	0.2336	0.6342	0.5790	0.0070	-0.4033	0.3153	1												
	0.0000	0.1704	**0.0000**	**0.0000**	0.9623	**0.0045**	**0.0290**													
govdebt_gdp	0.3555	0.1818	0.2803	0.1954	-0.0439	-0.0764	0.2491	0.2961	1											
	0.0131	0.2886	**0.0537**	0.1833	0.7672	0.6056	*0.0878*	**0.0410**												
unemp_rat	-0.3596	-0.3862	-0.1114	-0.2638	0.0556	-0.1816	-0.2588	-0.3534	-0.0455	1										
	0.0121	**0.0200**	0.4508	*0.0700*	0.7072	0.2167	*0.0757*	**0.0138**	0.7585											
inflation	-0.4183	-0.2974	-0.7294	-0.5071	0.1337	0.3614	-0.0237	-0.3701	-0.2772	-0.1138	1									
	0.0031	*0.0782*	**0.0000**	**0.0002**	0.3650	**0.0116**	0.8729	**0.0096**	*0.0565*	0.4413										
relig_fract	-0.0392	0.0954	0.0891	-0.1283	0.0154	0.1039	0.1105	0.1159	-0.1489	-0.2364	-0.0750	1								
	0.7935	0.5858	0.5514	0.3902	0.9179	0.4872	0.4596	0.4379	0.3179	0.1097	0.6163									
ethnic_fract	-0.2254	-0.4764	-0.3300	-0.1302	0.1475	0.0250	0.0301	-0.0843	-0.3344	0.1505	0.2013	0.2799	1							
	0.1277	**0.0038**	**0.0235**	0.3831	0.3224	0.8677	0.8409	0.5730	**0.0216**	0.3127	0.1748	*0.0567*								
lang_fract	-0.1746	-0.2110	-0.2933	0.0052	-0.1237	0.1324	0.0777	-0.1212	-0.3601	-0.0817	0.2416	0.2368	0.7029	1						
	0.2406	0.2237	**0.0454**	0.9723	0.4075	0.3750	0.6036	0.4171	**0.0129**	0.5852	0.1019	0.1091	**0.0000**							
legor_uk	0.3569	-0.1115	0.0953	0.1639	-0.2141	0.1659	0.2557	0.0809	0.2171	-0.2146	0.0079	0.3453	0.1738	0.2097	1					
	0.0128	0.5173	0.5194	0.2655	0.1439	0.2599	*0.0794*	0.5848	0.1382	0.1430	0.9576	**0.0174**	0.2427	0.1571						
legor_fr	-0.1637	-0.2742	-0.2356	-0.1160	0.2486	-0.1297	-0.0768	0.0483	0.0771	0.2268	0.3111	-0.3847	0.0893	0.0260	-0.3799	1				
	0.2663	0.1056	0.1069	0.4324	*0.0884*	0.3795	0.6040	0.7446	0.6022	0.1211	**0.0314**	**0.0076**	0.5505	0.8623	**0.0077**					
legor_ge	-0.3013	0.0584	-0.0015	-0.1840	-0.0050	0.0438	-0.0962	-0.2522	-0.1859	0.0562	-0.2413	0.2703	-0.0538	-0.0789	-0.3799	-0.5484	1			
	0.0375	0.7352	0.9919	0.2105	0.9730	0.7676	0.5152	*0.0837*	0.2059	0.7046	*0.0985*	*0.0662*	0.7192	0.5983	**0.0077**	**0.0001**				
legor_sc	0.2801	0.4424	0.2703	0.2783	-0.1068	-0.0950	-0.0764	0.2341	-0.1309	-0.1743	-0.1323	-0.3185	-0.3139	-0.2160	-0.1547	-0.2233	-0.2233	1		
	0.0538	*0.0069*	*0.0632*	*0.0555*	0.4698	0.5206	0.6060	0.1093	0.3750	0.2361	0.3701	**0.0291**	**0.0317**	0.1448	0.2939	0.1271	0.1271			
gini	-0.2051	-0.4086	-0.4725	-0.3461	0.4061	0.3046	0.2259	-0.0625	0.0115	-0.0002	0.3038	0.2687	0.3350	0.0704	0.2814	0.2585	-0.2506	-0.4106	1	
	0.1666	**0.0148**	**0.0008**	**0.0172**	**0.0046**	**0.0374**	0.1267	0.6762	0.9390	0.9988	**0.0379**	*0.0710*	**0.0229**	0.6420	*0.0553*	*0.0793*	*0.0894*	**0.0041**		
coopr	-0.3715	-0.8846	-0.4902	-0.3094	0.0834	0.3053	0.1423	-0.2632	-0.1513	0.2050	0.3403	-0.0530	0.3519	0.3056	0.1203	0.2063	-0.0728	-0.4079	0.4314	1
	0.0093	**0.0000**	**0.0004**	**0.0324**	0.5731	**0.0348**	0.3346	*0.0707*	0.3046	0.1622	**0.0180**	0.7236	**0.0153**	**0.0367**	0.4152	0.1594	0.6230	**0.0040**	**0.0025**	

(*) Each cell in the rows with a variable name reports the value of the correlation coefficient between that variable and the variable in the corresponding column. Each cell in the rows without a variable name reports the value of the significance level at which the hypothesis that the correlation coefficient is zero can be rejected. For practicality, **values in bold identify visually significance levels of 5% or lower** while *values in italics identify visually significance levels between 5% and 10%.*