Economic growth and social capital: happily together ever after?

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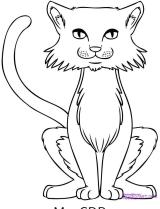
STATEC, Luxembourg

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The characters

M.me CS

Mr. GDP

Social capital a catalyst for economic growth

"Virtually every commercial transaction has within itself an element of trust, certainly any transaction conducted over a period of time. It can be plausibly argued that much of the economic backwardness in the world can be explained by the lack of mutual confidence." *(Arrow, 1972, p. 357)*

Social capital and economic growth

There are many reasons to argue that SC supports economic growth

- ▶ it reduces incentives for free-riding and moral hazard;
- ▶ it reduces transaction costs;
- ▶ it attenuates the principal-agent problem;
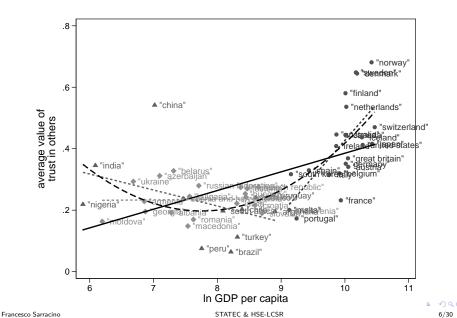- ▶ it solves collective action problems.

Social capital and economic growth

Many empirical works found evidence of a positive correlation between proxies of SC and economic growth.
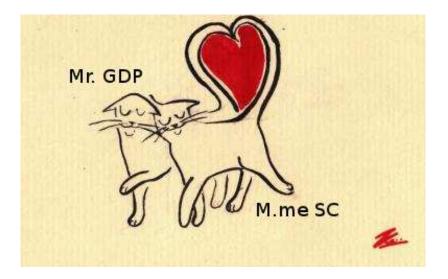(La porta et al., 1999; Whiteley, 2000; Zak and Knack, 2001; Beugelsdijk et al., 2004;... just to name a few!)

- ▶ Knack and Keefer (1997): trust and civic cooperation are strongly and positively associated with economic performace (1980 - 1992);
- ▶ Helliwell and Putnam (1995): civic community and GDP growth between 1950 and 1990 are positively associated;
- ▶ Narayan and Pritchett (1997): higher levels of group membership are correlated with higher incomes.

SC and GDP: an example

SC and GDP: a never ending love

SC and GDP: happily together ever after

"If anyone here has anything against,
speak now or forever hold your peace."

Different views

A matter of lobbies:

▶ Olson (1982): associations can act as "distributional coalitions" that lobby for policies to protect interests of special groups inhibiting economic growth.

Different views

A bad deal:

- ▶ increase in business and time pressure, residential mobility, disruption of marriage and family ties...

- ▶ the market tends "to reduce society to a desert" (*Polanyi, 1968; Hirsch, 1976; Bartolini and Bonatti, 2008*)

Different views

Some evidence:

- ▶ Putnam (2000): the decline of SC in US over the last 30 years;
- ▶ Helliwell (1996): evidence of a negative relationship between trust and productivity growth (1960 - 1992);
- ▶ Roth (2009): documents a negative correlation between trust and economic growth during the '90s.

The research question:

Does economic growth increase social capital?

My aim is to explore the relationship **over time** between social capital and economic growth overcoming the limitations of previous works:

- ▶ using a larger set of proxies of social capital;
- ▶ adopting WVS/EVS data on the period 1980 - 2009.
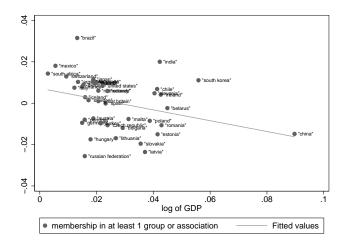
SC and GDP over at least 15 years

Figure: Correlations between time trends of group membership and of the logarithm of GDP per capita.

SC and GDP over at least 15 years

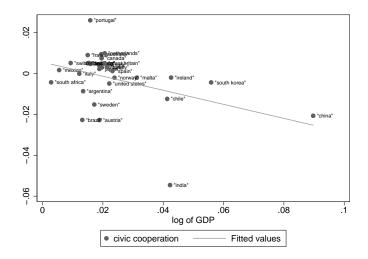Figure: Correlations between time trends of trust in others and of the logarithm of GDP per capita.

SC and GDP over at least 15 years

Figure: Correlations between time trends of the index of civicness and of the logarithm of GDP per capita.
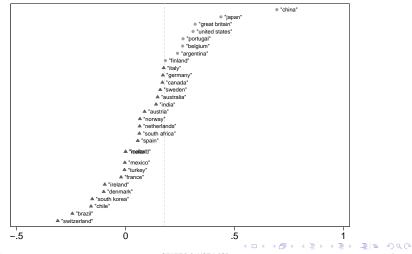
A possible interpretation

time series Vs. cross-country: a paradox

Hypothesis: social capital matters to trigger economic growth, but the latter erodes social capital when income inequality increases.

Two groups of countries

Figure: List of countries by trends of Gini index (SWIID data).

Is this relationship causal?

2SLS model:

$$\Delta lnGDP'_c = \pi_1 + \pi_2 \cdot lnPIfy_c + \pi_3 \cdot lnGDPy_c + \epsilon_c \qquad (1)$$

$$\Delta SC_c = \alpha + \beta \cdot \Delta lnGDP'_c + \nu_c \qquad (2)$$

where the subscript c stands for countries, $\Delta lnGDP'$ is the instrumented growth rate, and ϵ and ν are the two error terms.

IV estimates

Table: Trends for at least 15 years.

	group membership		trust in others		civicness	
	low Δ Gini	high Δ Gini	low Δ Gini	high Δ Gini	low Δ Gini	high Δ Gini
time trends of lngdp	0.431	-0.324***	-0.341	-0.0375*	-1.275	-0.318***
	(1.28)	(-7.31)	(-1.66)	(-2.40)	(-1.51)	(-7.81)
Constant	-0.00283	0.0121***	0.00802	-0.000281	0.0244	0.00941*
	(-0.40)	(4.63)	(1.79)	(-0.26)	(1.43)	(2.57)
N	22	8	22	8	22	8
F_stat	15.85	75.99	35.23	75.37	16.22	76.78
chi2	51.86	473.9	77.44	95.45	79.68	86.17

z statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Does more SC go with economic growth?

Across countries:

▶ a larger endowment of SC favors economic growth. In some cases the relationship is U-shaped;

▶ even if the early stages of economic development are associated with erosion of SC, the growth process itself will solve the problem;
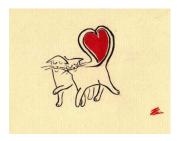
Does SC go with economic growth over time?

Hence, will economic growth increase SC?

Over time economic growth erodes SC in countries where income inequality increases the most.

This evidence is compatible with the hypothesis that SC is important to trigger economic growth. However, when economic growth is accompanied by increasing economic inequality, it erodes SC.

Happily together ever after?

Happily together ever after?

Inclusive economic growth is the receipt.

Thanks for your kind attention!

Data

The availability of internationally comparable time series on social capital variables is the main limiting aspect.

- ▶ **WVS/EVS data**
- ▶ collected in 6 waves between 1981 and 2009;
- ▶ all available countries with at least 15 years (this constraint will be removed);
- ▶ no transition economies (Roth, 2009; evidence from data);
- ▶ 30 countries;
- ▶ 186,000 observations.

The variables

GDP:

log of the GDP per capita (constant 2000 US $).
Source: World Development Indicators

Social Capital:

► group membership: share of the population participating in at least one group or association;

► trust in others: "generally speaking would you say that most people can be trusted, or that you can't be to careful in dealing with people?"

► civic cooperation: observed through answers to questions the justifiability of:
   ► "claiming government benefits which you are not entitled to";
   ► "avoiding a fare on public transport";
   ► "cheating on taxes if you have the chance";
   ► "accepting a bribe".

Descriptive statistics

variable	mean	sd	min	max	obs	missing
membership in at least 1 group or association	0.601	0.490	0	1	195434	0.0719
trust	0.343	0.475	0	1	201286	0.0441
civic cooperation	0.0612	0.944	-4.900	0.768	180140	0.145
ln of GDP per capita	9.179	1.226	5.763	10.65	208462	0.0100
Gini index	35.15	10.80	20.13	65.47	183846	0.127

Table: Descriptive statistics and missing values for the pooled data-set of countries with at least 10 years long time-spans.

Descriptive statistics

variable	wave 1	wave 2	wave 3	wave 4	wave 5	wave 6	total
membership in at least 1 group or association	0	0.157	0.0360	0.119	0.00196	0.0467	195434
trust	0.0613	0.0688	0.0383	0.0291	0.0322	0.0316	201286
civic cooperation	0.0576	0.0970	0.174	0.320	0.104	0.0326	180140
ln of GDP per capita	0.0116	0.00659	0	0.0220	0	0.0187	208462
Gini index	0.0634	0.0303	0	0.0654	0.285	0.415	183846

Table: Percentage of missing data across waves for the pooled data-set of countries with at least 10 years long time-spans.

List of countries

Table: Availability of data across waves

	1981-1984	1989-1993	1994-1998	1999-2004	2005-2007	2008-2009	Total
Argentina	912	961	1053	1248	983	0	5157
Australia	1189	0	2025	0	1386	0	4600
Austria	0	1301	0	1415	0	1452	4168
Belgium	1001	2576	0	1824	0	1495	6896
Brazil	0	1766	1141	0	1477	0	4384
Canada	1217	1673	0	1910	2107	0	6907
Chile	0	1458	977	1169	984	0	4588
China	0	985	1445	963	1867	0	5260
Denmark	1059	992	0	986	0	1478	4515
Finland	983	558	969	1015	1000	1073	5598
France	1117	939	0	1560	996	1487	6099
Germany	0	2893	1951	1937	1896	1940	10617
Iceland	909	672	0	925	0	780	3286
India	0	0	1769	1898	1778	0	5445
Ireland	1170	988	0	992	0	635	3785
Italy	1302	1932	0	1946	951	1456	7587
Japan	1099	911	985	1254	1020	0	5269
South Korea	918	1229	1247	1200	1181	0	5775
Malta	438	374	0	988	0	1425	3225
Mexico	1772	1384	2231	1497	1547	0	8431
Netherlands	1072	965	0	997	996	1523	5553
Nigeria	0	0	1851	0	0	0	1851
Norway	958	1156	1118	0	1018	1072	5322
Peru	0	0	1176	1490	1480	0	4146
Portugal	0	1149	0	975	0	1505	3629
South Africa	1433	0	2845	2956	2967	0	10201
Spain	2157	3887	1167	2295	1183	1468	12157
Sweden	876	944	957	974	963	1068	5782
Switzerland	0	863	1129	0	1186	1216	4394
Turkey	0	0	1878	1199	1339	1651	6067
Great Britain	1127	1440	0	960	1022	1516	6065
United States	2259	1782	1510	1048	1239	0	7978
Uruguay	0	0	975	0	864	0	1839
Total	24968	35778	30399	37761	33430	24240	186576
Observations	186576						

list of associations mentioned in the WVS/EVS

Respondents were asked to mention whether they belonged or were performing unpaid voluntary work for any of the following groups or associations:

social welfare service for elderly;
religious organization;
education, arts, music or cultural activities;
labour unions;
political parties;
local political actions;
human rights;
conservation, the environment, ecology;
other groups.

animal rights;
professional associations;
youth work;
sports or recreation;
women's group;
peace movement;
organization concerned with health;
consumer groups;

Empirical strategy

- ▶ I compute the trends of SC and GDP for each country separately;
- ▶ I regress the time trends of SC on the time trends of the log of GDP p.c.

Empirical strategy

- ▶ I compute the trends of SC and GDP for each country separately;
- ▶ I regress the time trends of SC on the time trends of the log of GDP p.c.

formally:

$$\vec{SC}_c = \alpha + \beta \cdot \vec{lnGDP}_c + \mu_c \tag{3}$$

Any eventual conclusion in terms of causal relationship is not justified! (I am working on it.)

Table: Correlations among long term trends of SC proxies and log of GDP per capita (at least 5 years).

	(1) group membership	(2) trust in others	(3) civicness
log of GDP	−0.292**	−0.354	−0.412**
	(−2.08)	(−1.27)	(−2.40)
Constant	0.325**	−0.139	−0.322**
	(2.30)	(−0.56)	(−2.07)
Observations	39	43	43

t statistics in parentheses

Country fixed effects are included in the model, but omitted for brevity.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.001$

Table: Correlations among long term trends of SC proxies and log of GDP per

capita.

	(1) group membership	(2) trust in others	(3) civicness
log of GDP	-0.235^{*} (-1.74)	-0.320^{**} (-2.20)	-0.351^{**} (-2.43)
Constant	0.457^{***} (4.33)	-0.0678 (-0.66)	-0.351^{**} (-2.52)
Observations	32	33	33

t statistics in parentheses

Country fixed effects are included in the model, but omitted for brevity.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.001$

IV estimates

Table: IV estimates for trends of at least 10 years.

	group membership		trust in others		civicness	
	low Δ Gini	high Δ Gini	low Δ Gini	high Δ Gini	low Δ Gini	high Δ Gini
main						
time trends of lngdp	0.271	-0.358**	-0.171	-0.0172	-0.881	-0.380**
	(0.93)	(-3.21)	(-1.41)	(-0.45)	(-1.34)	(-3.27)
Constant	0.000302	0.0109**	0.00438	-0.0000130	0.0159	0.00714
	(0.05)	(3.02)	(1.36)	(-0.01)	(1.21)	(1.63)
N	24	9	24	9	24	9
F_stat	16.32	27.64	14.90	21.68	16.56	27.10
chi2	27.72	760.3	18.44	117.9	41.34	300.1

z statistics in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$