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Keywords: Social capital, trust, macroeconomic stability, volatility

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Does social capital prevent macroeconomic instability ?*

Marc Sangnier†

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Abstract

This paper investigates the relationship between social capital, measured as trust, and macroeconomic instability. It is shown in a cross section of countries that higher trust is associated with lower macroeconomic instability. We use the inherited trust of Americans as an instrumental variable of trust in their origin country to overcome all potential reverse causality concerns. Trust is shown to be a important determinant of macroeconomic stability.

KEYWORDS : Social capital, trust, volatility, macroeconomic stability.
JEL CODES : E02, E30, N10.

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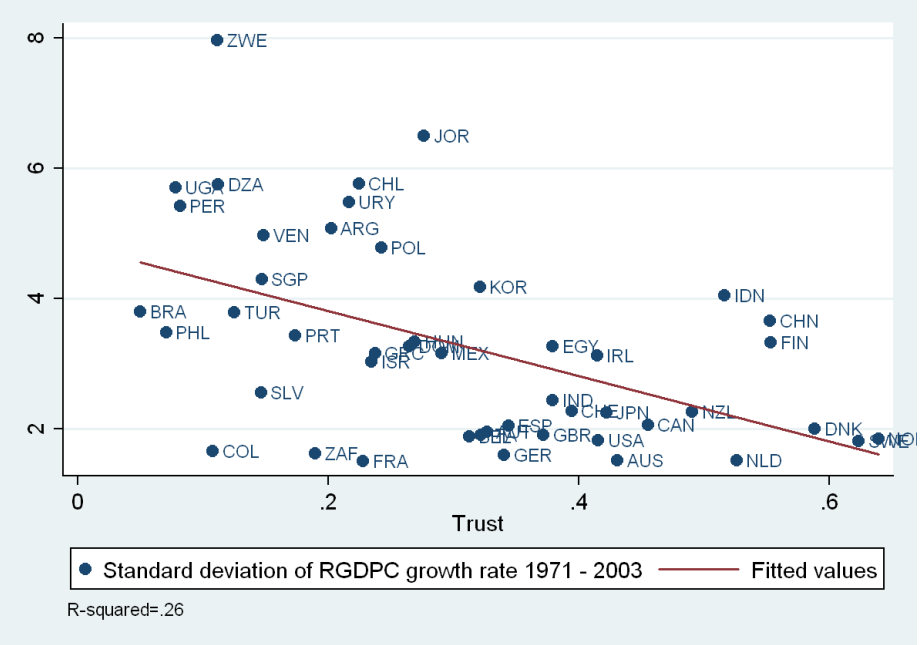

Figure 1 : Standard deviation of real GDP per capita growth rate (1971 - 2003) and trust (1980-2004).

1 Introduction

This paper investigates the relationship between social capital and macroeconomic instability. In a cross section of countries, higher trust is correlated with weaker macroeconomic volatility. We focus on this relationship and test alternative determinants of macroeconomic stability. Then, we try to disentangle backward causality using inherited trust of Americans immigrants as an indicator of latent social capital in origin country.

In Figure 1, trust is measured in each country by the share of people who answer "most people can be trusted" to following question of the World Values Survey between 1981 and 2003 : "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people ?". Macroeconomic instability is represented by the standard deviation of real GDP per capita growth rate between 1971 and 2003. The negative relationship between these two variables is highly significant. Differences in trust explain more than a quarter of cross country differences in volatility.

The fact that cultural traits such as norms of cooperation, civic spirit or beliefs regarding the behavior of others have an impact on macroeconomic per-

formance has been explored by a rich literature. However, so far we know, macroeconomic stability remains an unexplored macroeconomic performance that may be in part explained by social capital.

Social capital has been defined by Putman (2000) as "the collective values of all social networks and the inclinations that arise from these networks to do things for each others". Such a definition let us understand the key role of reciprocal beliefs about the other members of a society for economic outcomes. It seems straightforward that reciprocal behaviors and beliefs may strongly affect the performance of society. But how may higher social capital reduce macroeconomic instability ?

Following the definition by Putman, we believe that social capital raises various norms and behaviors that may favor the smoothing of aggregate fluctuations. First, extended civic behavior increases the probability that rules established by the authorities will be followed by agents and that policies will be peacefully accepted. This view does not make any hypothesis regarding the quality of economic management by authorities. However, it assumes that policy changes are more accepted and broadly applied in societies endowed with higher social capital. Second, inclinations to solidarity behavior and collective strategies are likely to reduce aggregate losses and smooth collective choices. On the contrary, individualistic strategies may create distortions because agents have to adapt to the unanticipated behavior of others. Third, following Glaeser et al. (2000), the most general dimension of social capital, i.e. trust, is closely linked to trustworthiness. Hence, trust can be considered as an individual commitment to behave well with all other agents. Thus, this decreases costs of interactions and allows to build expectations and plans with greater certainty, what is also likely to smooth aggregate output.

These channels from social capital to macroeconomic stability can be found under alternative and various forms in the literature that investigates the impact of culture and social capital on economic outcomes. In that dimension, this paper is closely related to all researches that aim to point a link from social capital to economic performance.

After the funding pieces of work run by Putman (1993), lots of evidences about the impact of social capital on economic performance have been raised by scholars. Knack and Keefer (1997) showed that countries with higher social capital have also better institutions, higher and more equal incomes and a better educated population. Similar evidences have been provided by Tabellini (2005) in the case of European regions. Guiso et al. (2006, 2007 and 2008) presented

some evidences about the way economic experiences from the distant past may shape current economic performance, through transmission of adequate norms. Dincer and Uslaner (2007) have found a positive relationship between trust and growth. More recently, Algan and Cahuc (2010) provide new evidences regarding the impact of trust on economic development. See also Zack and Knack (2001), Knack (2001), and Tabellini (2007, 2008) for additional developments.

A key aspect of this literature is about the issue of the malleability of social capital with respect to current economic situation. In rough terms, a first approach considers that norms and values are very sticky and slow moving parameters of a society and therefore weakly altered by current events ; on the contrary, a second approach emphasizes the changes in social capital induced by changes in the current economic situation. Our view is closer to the former approach. In this paper, we assume that social capital is a *latent component* of a society. Consequently, we consider that latent social capital is unaffected by macroeconomic volatility. Our first results do rely on this assumption.

Indeed, we measure social capital trough a widely used question of the World Value Survey. Using the share of trusty people as a proxy for social capital at the country level during the last quarter of the 20th century, we show that there is a strong and robust relationship between trust and macroeconomic stability. Indeed, social capital decreases standard deviation of real GDP per capita growth rate, the frequency of negative growth years, the probability to experience negative growth next year when growth rate of GDP per capita is positive, and limit the worst performance in growth and the average negative performance of growth.

However, the hypothesis that *current measure* of social capital may be impacted by current macroeconomic outcomes cannot be fully rejected. For example, it has been shown by Giuliano and Spilimbergo (2009) that people who experienced recessions during early adulthood are likely to have lower individual social capital. Hence, we need a measure of social capital that is unaltered by macroeconomic instability. Subsequently, we confirm earlier results by using inherited trust of Americans as a proxy for the latent social capital in origin country. This method, inspired from Algan and Cahuc (2010) overcome all potential reverse causality effects.

In most of our estimations, trust is proved to be an important determinant of macroeconomic stability. However, it is not the only one. A rich literature has examined key determinants of macroeconomic volatility. Most of theses papers focus on the institutional and political context. Alesina and Drazen (1991)

argue that stabilizations are delayed because interest groups fight to know who will bear the economic burden. In the same vain, Rodrik (1999) shows that the effects of external shocks on growth is larger the greater the latent social conflicts in a society and the weaker its institutions of conflict management. In the case of less developed countries, Acemoglu et al. (2003) states that macroeconomic fluctuations arise from turbulence created by politicians in weakly institutionalized economies. See also Fernandez and Rodrik (2001), François and Zabojnik (2005), and Acemoglu et al. (2008) for a focus on reforms feasibility. This literature points out the important role of institutions quality in economic management. Our results confirm this effect which goes in the same direction as the one of social capital. This lets room for a joint interpretation of institutions and beliefs, these two variables mutually reinforcing, as stressed by François (2008).

The remaining of this paper is organized as follows. Section 2 describes the data we used and the estimation strategy, section 3 presents empirical results, and, finally, section 4 concludes.

2 Data and estimation strategy

This section documents our cross-country estimation strategy and describes the various data used in this analysis.

Cross-country OLS regressions To investigate the effect of social capital on macroeconomic instability, we estimate following cross country model using ordinary least squares :

$$Volatility_i = a_0 + a_1 Trust_i + \sum_{j=2}^{n} a_j x_{ji} + \varepsilon_i \tag{1}$$

where $Volatility_i$ is an indicator of macroeconomic instability in country i and $Trust_i$ is a measure of social capital in country i for the period of interest, and x_{ji} is a control variable that may explain cross section differences in macroeconomic volatility, ε_i is the error term. We expect the coefficient a_1 to be negative. Some specifications also include regional dummies for Africa, Asia and Latin America to control for common development patterns.

Measuring social capital For each country, we measure social capital as the share of people who answer "most people can be trusted" to following question

of the World Values Survey between 1981 and 2003 : "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people ?". One of our main hypothesis is that social capital is a very slow moving parameter at the country level. Therefore, the later measure of trust is supposed to be a general indicator of social capital over the whole period of interest. See Knack (2001) for a discussion of the validity of generalized trust as an indicator of national social capital.

Inherited trust of Americans This method is inspired from Algan and Cahuc (2010). It relies on the assumption that differences in trust among Americans are linked to their ancestors' country of origin. We estimate the following expression using a probit model :

$$Trust_i^c = a_0 + \sum_{j=1}^{n} a_j x_{ji} + I_c + \varepsilon_i \tag{2}$$

where $Trust_i^c$ is the answer of individual i, claiming that its ancestors came from country c, to the trust question of the General Social Survey : "Generally speaking, would you say that most people can be trusted or that you can't be too careful in life ?". I_c is the origin country fixed effect, Norway being the omitted category[1], x_{ji} an individual characteristic of respondent i and ε_i the error term. $Trust_i^c$ is equals to 1 if individual i originating from country c answer "most people can be trusted", 0 elsewhere. This approach rely on the assumption that differences in beliefs among Americans of foreign origin are linked to differences between their countries of origin. The later model is estimated using Americans of second, third of fourth generations.

Data on macroeconomic volatility All our macroeconomic indicators are computed from the Penn World Table. All variables are constant price entries. We used data of 47 countries over the period 1971-2003. As a first measure of instability, we simply compute the standard deviation of GDP per capita growth rate. We also use the frequency of negative growth years and the frequency of downturns. The later value is empirical probability of experiencing negative growth in t provided that growth was positive in $t-1$: $P\left(g_t < 0 \mid g_{t-1} > 0\right)$, where g_t is the growth rate of real GDP per capita a time t. Two more measures

[1] The choice of Norway as the reference origin country is arbitrary and does not drive our results.

that focus on negative growth are presented : the worst and the average of negative growth events.

Alternative volatility determinants Testing determinants of macroeconomic instability that may challenge social capital, we use indicators of institutional quality, education and fractionalization in the society. We measure differences in political institutions by using means of the "combined polity score" and the "constraint on the executive" variables from the Polity IV data set. Education is represented by the average schooling years in the total population aged 25 and over from Barro and Lee (2000). Ethnolinguistic fractionalization is taken from Easterly and Levine (1997), whereas ethnic fractionalization is taken from Alesina et al. (2003). All this variable have been gathered thanks to the Quality of Government data set[2].

Macroeconomic control variables Instability regressions also include macroeconomic control variables obtained from the Penn World Table. We follow Anbarci et al. (2005) by using initial wealth, population, public expenditure and openness. Public expenditure is measured as the average ratio to GDP between 1971 and 2003 ; initial GDP per capita and population are taken in 1971, and openness as the average value of $(X + M)/GDP$ between 1971 and 2003.

3 Empirical results

This section documents the empirical relationship between social capital, measured as trust, and macroeconomic volatility. We first present results of standard OLS estimations. Then, we focus on the estimation of origin country fixed effect in the General Social Survey and their use as an instrument for trust in the origin country.

OLS estimates

To investigate the effect of social capital on trust, we first estimate equation (1) with ordinary least squares for 47 countries[3] over the period 1971 - 2003. This

[2] http://www.qog.pol.gu.se/

[3] Observed countries are following : Algeria, Argentina, Australia, Austria, Belgium, Brazil, Canada, Chile, China, Colombia, Denmark, Dominican Republic, El Salvador, Finland, France, Germany, Greece, Hungary, India, Indonesia, Ireland, Israel, Italy, Japan, Egypt, Jordan, Republic of Korea, Mexico, Netherlands, New Zealand, Norway, Peru, Philippines, Poland, Portugal, Singapore, South Africa, Zimbabwe, Spain, Sweden, Switzerland, Turkey,

period is chosen because it offers the maximum observations for both macroeconomic and control variables. Summary statistics of used variables are presented in table 4.

Table 1 presents the results of the estimation, taking the standard deviation of GDP per capita growth rate between 1971 and 2003 as a measure of macroeconomic instability. Column 1 shows the simplest relationship between trust and volatility. The estimated coefficient of trust is negative and highly significant. Figure 1 depicts the corresponding relationship.

Columns 2 and 3 subsequently introduce initial GDP per capita and population as explanatory variables. This decreases the size of the estimated coefficient of trust but leave it highly significant. In column 3, the estimated coefficients for initial wealth and population are both negative and significant. A one standard deviation increase in trust induces a $0,46$ decrease in the standard deviation of GDP per capita growth rate. As a comparison, a similar change in initial GDP per capita (population) induces a $0,84$ $(0,61)$ decrease in volatility. Hence, the effect of trust on the standard deviation of GDP per capita growth rate is weaker that the one of initial wealth or population size, but of the same order of magnitude. Evaluated at the mean, a $0,46$ decrease represents a 14% negative change in standard deviation of GDP per capita.

Columns 4, 5 and 6 expand the set of explanatory variables by introducing average public expenditure as a share of GDP in standard deviation of GDP per capita and openness as the average value of $(X+M)/GDP$. These two variables are first introduced individually in columns 4 and 5. Column 6 shows the estimated coefficients when all variables are entered together in the specification. This leave the R^2 unchanged at $0,51$ and do not alter the coefficients of trust, initial wealth and population.

In column 7, we introduce regional dummies for Africa, Asia and Latin America. This reduces the absolute values of the coefficient related to trust and initial GDP per capita and leave almost unchanged the estimated coefficient of initial population. The significance level and the absolute value of the estimated coefficient of trust are weaker in this specification. A one standard deviation increase in trust induces a $0,27$ decrease in volatility whereas comparable effects of changes in initial wealth and population are respectively $0,61$ and $0,65$.

Table 1 bis tests alternative determinants of macroeconomic stability. Columns 1 to 5 shows estimated coefficients of trust and alternative variables, entered sep-

Uganda, United Kingdom, United States, Uruguay, Venezuela.

arately. In column 1, we first test the effect of institutional quality on macroeconomic stability. Institutional quality has a negative and significant effect on economic instability. A one standard deviation increase in institutional score decreases volatility by $1,15$. This effect is more than three times bigger than the one associated with a comparable change in trust. In columns 2 to 5, we enter successively alternative variables that may reduce macroeconomic instability. The constraint on the executive, a component of the Polity IV combined score does not seem to have any effect on the stander deviation of GDP per capita growth rate. The average number of schooling years or the level of fractionalization (measured using two different methods) do not bring any additional explanation and leave unchanged the estimated coefficient of trust.

These later results suggest that collective norms and values are more likely to produce good conditions for smooth economical growth than ethnic unity or education. Moreover, this also sustain the hypothesis that social capital is not only a matter of education, nor of ethnic proximity. Column 6 show the results when including all alternative variables together. Results are unchanged. Column 7 presents the estimated coefficient for the most demanding specification, including regional dummies. As previously noted, this reduce the absolute value of the coefficient of trust which also becomes non-significant but not far from the 10% level of significance.

To sum up results presented in table 1 and 1 bis, note that trust substantially favor macroeconomic stability, measured as the standard deviation of real GDP per capita growth rate, and that institutional quality is the stronger alternative explanatory variable. Having said that, we now focus on alternative measures of macroeconomic instability in order to get more evidences about the effect of social capital on economic stability.

As a first step into this direction, we first regress the frequency of negative growth for GDP per capita between 1971 and 2003. Figure 2 depicts the relationship between trust and the frequency of negative growth rate of GDP per capita. Tables 2 and 2 bis replicate the estimations presented above. The estimated coefficient of trust is negative and significant in all specifications. Column 7 of table 2 bis, which presents estimated coefficients in the most demanding specification, allows to compare the effects of trust, Polity IV and ethnic fractionalization. Corresponding effects for a one standard deviation change are respectively $0,039$, $0,046$ and $0,019$. The effect of trust is thus close to the effect of the institutional quality and twice bigger as the effect of ethnic fractionalization. Note that a $0,04$ decrease in the frequency of negative growth

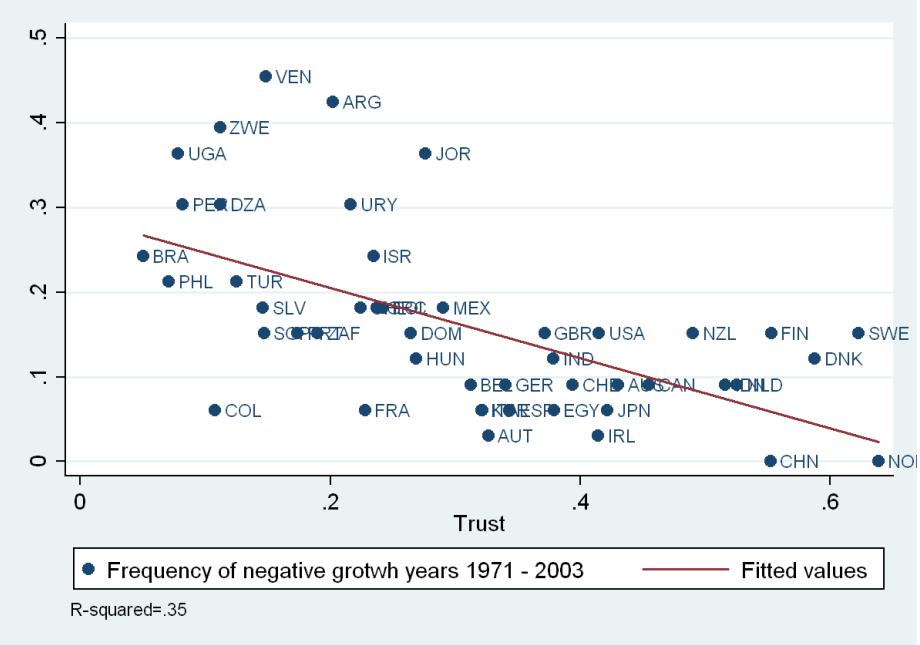

Figure 2 : Frequency of negative growth (1971-2003) and trust (1980-2004).

rate represents a 25% drop in this variable.

As a additional evidence, we repeat the same exercise, but using the empirical probability of a downturn as measure of macroeconomic instability. Figure 3 depicts the associated relationship between this volatility variable and trust. Table 3 and 3 bis present related estimation results. As in the previous case, the estimated coefficient of trust is always negative and significant. In column 7 of table 3 bis, the effect implied by a one standard deviation increase of trust amounts $0,031$ whereas the effect of a comparable change of institutional quality is $0,055$. Once again, effects of these two variables are of similar magnitude. A $0,031$ decrease in the probability of downturn represents a 26% drop in this variable.

Social capital decreases macroeconomic volatility measured as the frequency of negative growth years or as the probability of downturn. Thus, these two different indicators of macroeconomic instability confirm earlier results. As complementary evidences, figures 4 and 5 show the positive relationship between trust and, respectively, the worst and the average performance in negative GDP per capita growth rate between 1971 and 2003. Higher social capital is thus associated with smaller losses in bad economic situations.

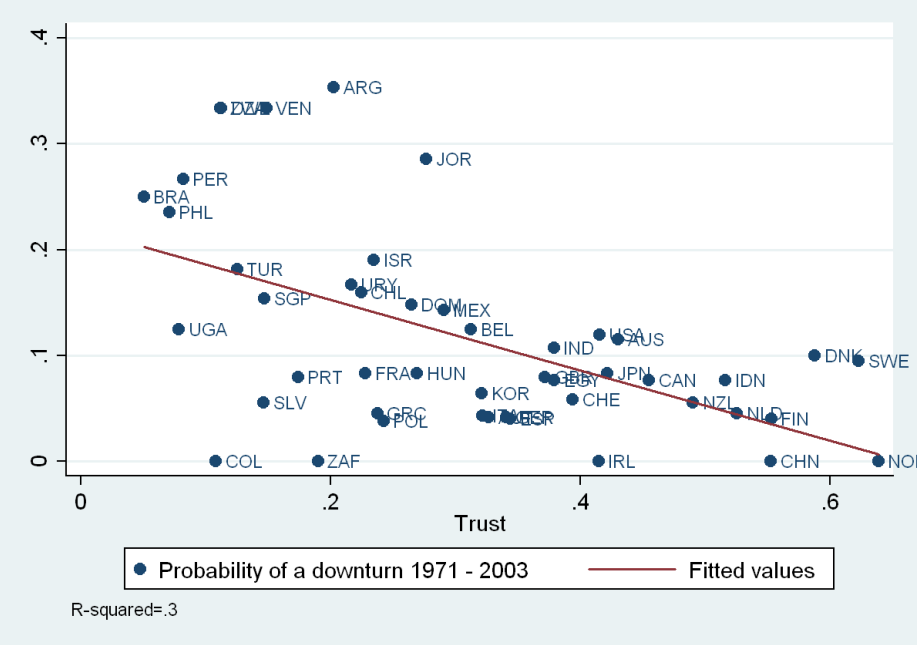

Figure 3 : Probability of a downturn (1971-2003) and trust (1980-2004).

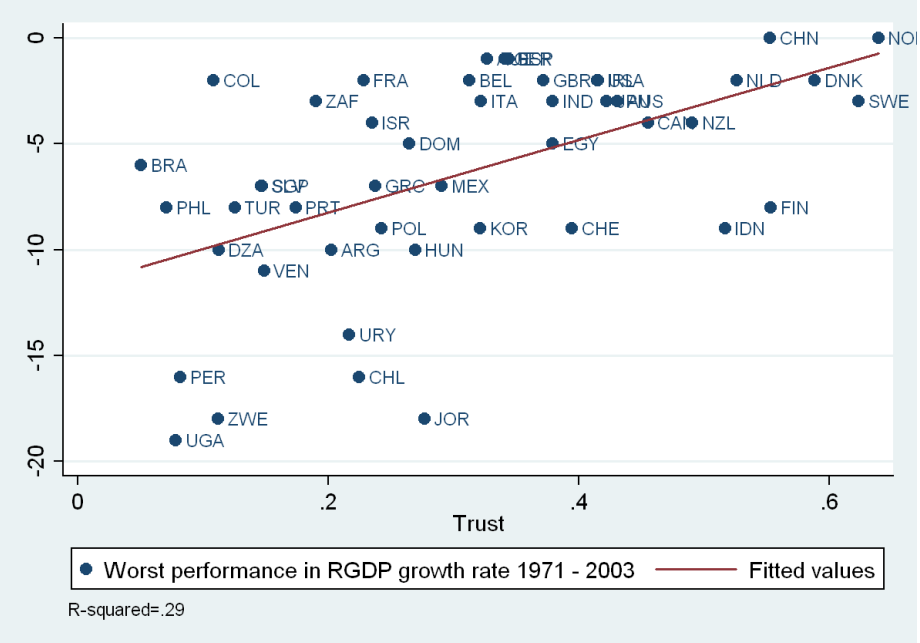

Figure 4 : Worst performance in real GDP per capita growth rate (1971-2003) and trust (1980-2004).

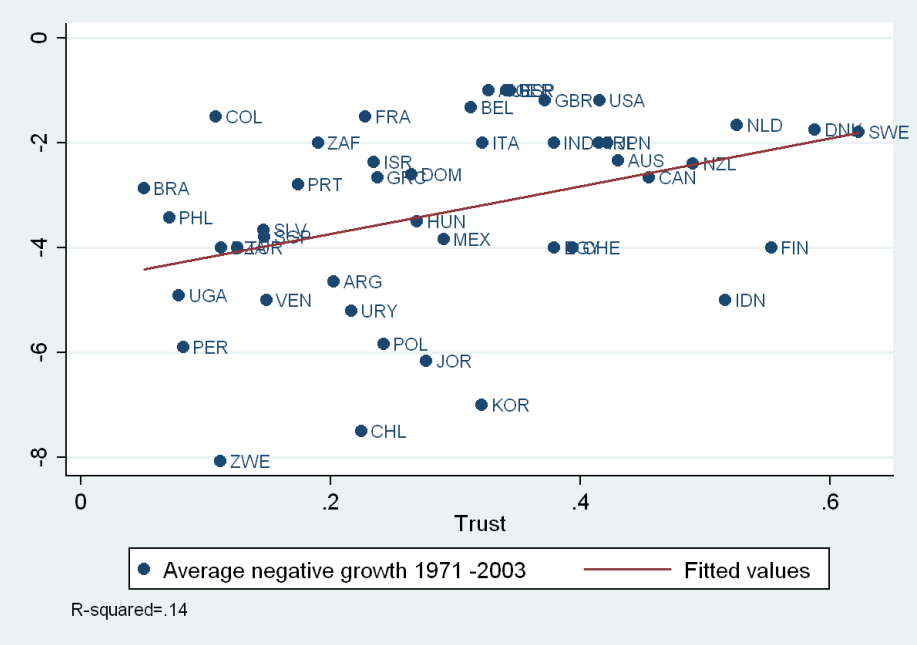

Figure 5 : Average negative performance in real GDP per capita growth rate (1971-2003) and trust (1980-2004).

Inherited trust of Americans

In has been shown by Giuliano and Spilimbergo (2009) that macroeconomic events, in particular macroeconomic shocks, are likely to alter beliefs of agents and thus at the aggregate level. Although this may look as totally opposed to our assumption about social capital, their approach is compatible with ours. In fact, they argue that beliefs are formed at a certain age, this is the so called "impressionable years hypothesis", and remain almost unchanged after it. Hence, beliefs are changing slowly over time because only a fraction of the population is likely to change beliefs as a reaction to current macroeconomic situation. Thus, our identification hypothesis remain plausible despite the potential reverse causality in the medium term. However, to be sure to avoid all reverse causality concerns and consistent with our view of deep trust as a indicator of latent social capital, we now take inherited trust of US immigrant as an alternative measure of social capital in their origin country.

This strategy, inspired by from Algan and Cahuc (2010) has for main advantage to avoid all effects of potential reverse causality from macroeconomic instability to trust. This approach relies on the assumption that differences in

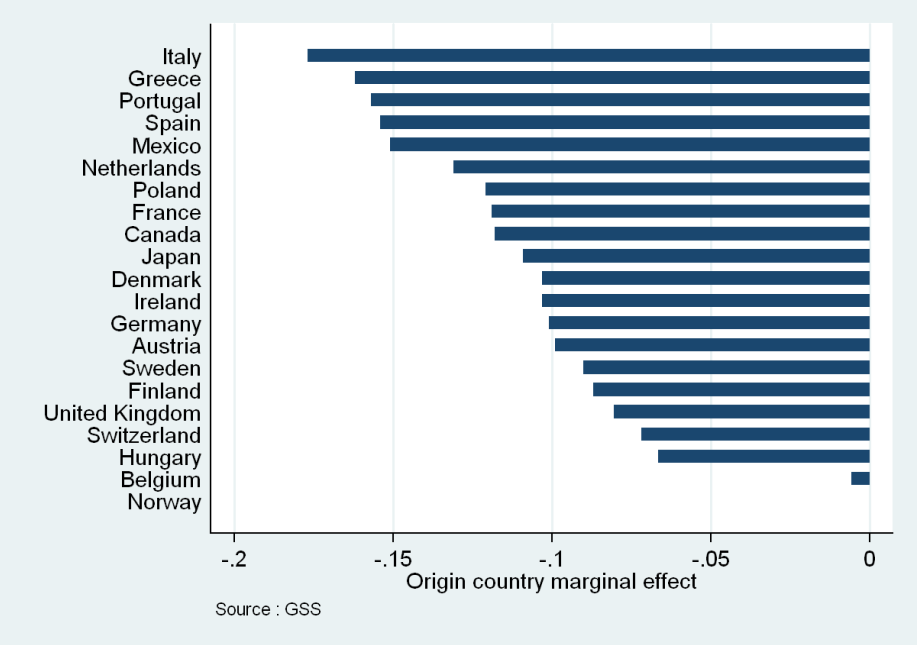

Figure 6 : Inherited trust of Americans.

beliefs among Americans of foreign origin are linked to differences beliefs between their countries of origin. To make sure that observed Americans have not been affected by macroeconomic volatility after 1970, we focus on individuals whose forbears have immigrated before 1970. Hence, assuming 25 years between each generation, selected individuals are immigrants of second generation born before 1970 ; third generation immigrants born before 1995 ; and fourth generation immigrants. Descriptive statistics of selected individuals characteristics are presented in table 5. Table 6 presents the share of trusty Americans by origin country.

Having estimated equation (2), marginal effects are reported in table 7 and represented in figure 6. Marginal effects of other variables are reported in table 7 bis. The main drawback of this approach is to shrink the number of available countries from 47 to 24. Most of the least developed countries are lost due to this method. Summary statistics for the observations used in following estimations are presented in table 11.

Instrumental variable estimates

We now use origin country fixed effects as an instrument for social capital differences in cross country regressions. Instrumental variables estimations are run with 24 countries[4]. Due to data shortness, we restrict ourselves to a specification that includes social capital, institutions, education, ethnic fractionalization and initial wealth. Table 8 presents results of the first stage regression.

Table 9 displays the estimates of the effect of trust and others alternative variables on our three indicators of macroeconomic instability. Odd-numbered columns display instrumental variables estimates, whereas even presents the OLS results of corresponding specification over this sample of countries. Table 10 presents associated summary statistics.

In column 1 of table 9 the dependent variable is the standard deviation of GDP per capita growth rate. The estimated coefficient of trust amounts $-2,923$. Hence, a one standard deviation change in social capital is associated with a $0,42$ decrease in the standard deviation of GDP per capita growth rate. Comparable effects of the alternative significant explanatory variables are : $0,23$ for Polity IV and $0,13$ for ethnic fractionalization. Hence, trust has the most important effect on standard deviation of GDP per capita growth rate in this specification. Evaluated at the mean, a $0,42$ change in volatility represents a 16% move. Column 2 presents the results of corresponding OLS regression. Comparing the estimated coefficient suggest that our former OLS estimates of the effect of trust on macroeconomic instability were biased downwards.

Additional instrumental variable estimations confirm earlier results. In column 3, we estimated the effect of trust on the frequency of downturn. The estimated coefficient of trust is significant at the 1% level and equals $-0,38$. None of the alternative explanatory variables is significant. A 10 percentage points increase in the share of trusty people induces a $3,8$ percentage point decrease in the frequency of downturns between 1971 and 2003. Given that the average value of this indicator is $0,07$, such a change represents more than a 50% cut in volatility at the mean.

The frequency of negative growth is the dependent variable in column 5. The estimated coefficient of trust amounts $-0,627$. Associated effect in volatility for a 10 percentage points increase in trust is a decrease of $6,3$ percentage points. This represents a 60% cut at the mean for this volatility indicator.

[4] Observed countries are following : Austria, Canada, China, Denmark, Great Britain, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Mexico, Netherlands, Norway, Philippines, Poland, Spain, Sweden, Switzerland, India, Portugal, Belgium.

Using instrumental variables allows to avoid all endogeneity concerns and to show that social capital, measured as trust, has a strong and significant effect on various indicators of macroeconomic instability in cross country regressions. Moreover, alternative explanatory variables exhibits both weaker coefficients and lower significance when trust is instrumented by inherited trust. Estimated effect of trust on macroeconomic instability are of great magnitude. In the case of the frequency of negative growth events and of downturns, we estimated that a 10 percentage points change in trust induces up to a 60% cut in the frequency of negative growth events at the mean.

4 Conclusion

In a cross section of countries, social capital has been shown to have a negative impact on macroeconomic instability. Higher trust reduces the frequency of crisis, limits output drops and prevents growth downturns. Using trust of Americans as a latent indicator of trust in their origin country, we provided additional evidences of these effects, avoiding all potential reverse causality concerns.

Our estimates of the effect of trust suggest that social capital is likely to be a key determinant in macroeconomic stability. Thus lower volatility can be added to the list of economic performance favored by higher social capital. Our results also confirm the critical role of institutions in economic management. The joint significance of trust and political institutions variables encountered in this analysis supports the mutually reinforcing relationship stressed by François (2008).

Moreover, this paper does not provide any evidences about the individual behaviors that constitute the channels from social capital to macroeconomic stability. These issues have to be investigated in future researches, exploring the question of reforms acceptability and personal commitment. This lets room for future researches.

References

[1] Daron Acemoglu, Simon Johnson, Pablo Querubin, and James A. Robinson. When does policy reform work? the case of central bank independence. NBER Working Papers 14033, National Bureau of Economic Research, Inc, May 2008.

[2] Daron Acemoglu, Simon Johnson, James Robinson, and Yunyong Thaicharoen. Institutional causes, macroeconomic symptoms: volatility, crises and growth. *Journal of Monetary Economics*, 50(1):49–123, January 2003.

[3] Alberto Alesina, Arnaud Devleeschauwer, William Easterly, Sergio Kurlat, and Romain Wacziarg. Fractionalization. *Journal of Economic Growth*, 8(2):155–94, June 2003.

[4] Alberto Alesina and Allan Drazen. Why are stabilizations delayed? *American Economic Review*, 81(5):1170–88, December 1991.

[5] Yann Algan and Pierre Cahuc. Inherited trust and growth. *American Economic Review*, Forthcoming 2010.

[6] Nejat Anbarci, Jonathan Hill, and Hasan Kirmanoglu. Institutions and growth volatility. Working Papers 0508, Florida International University, Department of Economics, June 2005.

[7] Robert J Barro and Jong-Wha Lee. International data on educational attainment: Updates and implications. *Oxford Economic Papers*, 53(3):541–63, July 2001.

[8] Oguzhan Dincer and Eric Uslaner. Trust and growth. Working Papers 2007.73, Fondazione Eni Enrico Mattei, July 2007.

[9] William Easterly and Ross Levine. Africa's growth tragedy: Policies and ethnic divisions. *The Quarterly Journal of Economics*, 112(4):1203–50, November 1997.

[10] Raquel Fernandez and Dani Rodrik. Resistance to reform: Status quo bias in the presence of individual-specific uncertainty. *American Economic Review*, 81(5):1146–55, December 1991.

[11] Patrick Francois. Norms and institution formation. CEPR Discussion Papers 6735, C.E.P.R. Discussion Papers, March 2008.

[12] Patrick Francois and Jan Zabojnik. Trust, social capital, and economic development. *Journal of the European Economic Association*, 3(1):51–94, 03 2005.

[13] Paola Giuliano and Antonio Spilimbergo. Growing up in a recession: Beliefs and the macroeconomy. NBER Working Papers 15321, National Bureau of Economic Research, Inc, September 2009.

[14] Edward L. Glaeser, David I. Laibson, Jose A. Scheinkman, and Christine L. Soutter. Measuring trust. *The Quarterly Journal of Economics*, 115(3):811–846, August 2000.

[15] Luigi Guiso, Paola Sapienza, and Luigi Zingales. Does culture affect economic outcomes? *Journal of Economic Perspectives*, 20(2):23–48, Spring 2006.

[16] Luigi Guiso, Paola Sapienza, and Luigi Zingales. Social capital as good culture. CEPR Discussion Papers 6657, C.E.P.R. Discussion Papers, January 2008.

[17] Stephen Knack and Philip Keefer. Does social capital have an economic payoff? a cross-country investigation. *The Quarterly Journal of Economics*, 112(4):1251–88, November 1997.

[18] Robert D. Putnam. *Bowling Alone: The Collapse and Revival of American Community*. Simon & Schuster, June 2000.

[19] Robert D. Putnam, Robert Leonardi, and Raffaella Y. Nanetti. *Making Democracy Work: Civic Traditions in Modern Italy*. Princeton University Press, May 1993.

[20] Dani Rodrik. Where did all the growth go? external shocks, social conflict, and growth collapses. *Journal of Economic Growth*, 4(4):385–412, December 1999.

[21] Guido Tabellini. Culture and institutions: Economic development in the regions of europe. Technical report, 2005.

[22] Guido Tabellini. The scope of cooperation: Norms and incentives. Levine's working paper archive, David K. Levine, March 2007.

[23] Paul J Zak and Stephen Knack. Trust and growth. *Economic Journal*, 111(470):295–321, April 2001.

Table 1 -

Dependent variable : Standard deviation of GDP per capita growth rate (1971 - 2003)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Trust	-4.982***	-3.801***	-2.936***	-3.032***	-2.860***	-2.955***	-1.710*
	(0.000133)	(0.00122)	(0.00379)	(0.00258)	(0.00384)	(0.00275)	(0.0588)
Initial GDP per capita (log)		-0.676***	-0.982***	-0.929***	-0.999***	-0.948***	-0.712**
		(0.000173)	(4.03e-06)	(0.000189)	(7.46e-06)	(0.000355)	(0.0303)
Initial population (log)			-0.430***	-0.410***	-0.468***	-0.447***	-0.464***
			(0.00117)	(0.00282)	(0.00264)	(0.00864)	(0.00358)
Public expenditure				0.0135		0.0125	0.0179
				(0.567)		(0.624)	(0.537)
Openness					-0.00274	-0.00253	-0.00182
					(0.421)	(0.504)	(0.642)
Constant	4.801***	10.37***	16.97***	16.08***	17.62***	16.74***	13.89***
	(0)	(1.84e-08)	(1.56e-07)	(2.66e-05)	(1.14e-06)	(0.000166)	(0.00124)
Regional dummies	-	-	-	-	-	-	Yes
Observations	47	47	47	47	47	47	47
R-squared	0.260	0.384	0.511	0.515	0.515	0.519	0.591

Robust p values in parentheses
*** p<0.01, ** p<0.05, * p<0.1
OLS regressions
Regional dummies are included for Africa, Asia and Latin America

Table 1 bis -

Dependent variable : Standard deviation of GDP per capita growth rate (1971 - 2003)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Trust	-2.112**	-3.041**	-3.206***	-3.042***	-2.989***	-2.268**	-1.570
	(0.0145)	(0.0161)	(0.00561)	(0.00295)	(0.00280)	(0.0218)	(0.120)
Initial GDP per capita (log)	0.0560	-0.973***	-1.032***	-0.954***	-0.957***	0.0103	0.236
	(0.857)	(0.00338)	(0.000187)	(0.000455)	(0.000479)	(0.973)	(0.556)
Initial population (log)	-0.405***	-0.457**	-0.451***	-0.445***	-0.442**	-0.407***	-0.479***
	(0.00394)	(0.0106)	(0.00727)	(0.00956)	(0.0132)	(0.00378)	(0.00156)
Public expenditure	0.00302	0.0121	0.0127	0.0136	0.0130	0.00352	0.00987
	(0.872)	(0.642)	(0.627)	(0.601)	(0.622)	(0.855)	(0.598)
Openness	-0.00923***	-0.00266	-0.00244	-0.00244	-0.00237	-0.00913**	-0.0104**
	(0.00655)	(0.502)	(0.531)	(0.523)	(0.557)	(0.0100)	(0.0304)
Polity IV	-0.204***					-0.203***	-0.200***
	(0.000271)					(0.000370)	(0.000484)
Constraint on the executive		0.0118					
		(0.901)					
Schoolin years			0.0428			0.0206	-0.00890
			(0.674)			(0.801)	(0.920)
Ethnic fractionnalization				-0.188		-0.0715	-0.0936
				(0.796)		(0.899)	(0.852)
Ethnolinguistic fractionalization					-0.133		
					(0.901)		
Constant	8.813**	17.05***	17.31***	16.83***	16.79***	9.143**	7.479**
	(0.0198)	(0.000652)	(4.08e-05)	(0.000221)	(0.000206)	(0.0100)	(0.0494)
Regional dummies	-	-	-	-	-	-	Yes
Observations	47	47	47	47	47	47	47
R-squared	0.694	0.519	0.520	0.519	0.519	0.695	0.739

Robust p values in parentheses
*** p<0.01, ** p<0.05, * p<0.1
OLS regressions
Regional dummies are included for Africa, Asia and Latin America

Table 2 -

Dependent variable : Frequency of negative growth years (1971 - 2003)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Trust	-0.414***	-0.418***	-0.377***	-0.402***	-0.359***	-0.383***	-0.292***
	(7.65e-06)	(1.22e-05)	(6.71e-05)	(1.48e-05)	(5.66e-05)	(1.54e-05)	(0.000139)
Initial GDP per capita (log)		0.00244	-0.0119	0.00202	-0.0161	-0.00272	0.0130
		(0.853)	(0.458)	(0.900)	(0.309)	(0.865)	(0.513)
Initial population (log)			-0.0201**	-0.0151*	-0.0298***	-0.0243**	-0.0241**
			(0.0463)	(0.0929)	(0.00361)	(0.0115)	(0.0160)
Public expenditure				0.00352***		0.00328**	0.00359**
				(0.00289)		(0.0106)	(0.0175)
Openness					-0.000684***	-0.000628**	-0.000543**
					(0.00344)	(0.0257)	(0.0463)
Constant	0.287***	0.267**	0.577***	0.343	0.739***	0.507**	0.300
	0	(0.0202)	(0.00898)	(0.125)	(0.00103)	(0.0310)	(0.182)
Regional dummies	-	-	-	-	-	-	Yes
Observations	47	47	47	47	47	47	47
R-squared	0.351	0.351	0.406	0.464	0.455	0.505	0.573

Robust p values in parentheses
*** p<0.01, ** p<0.05, * p<0.1
OLS regressions
Regional dummies are included for Africa, Asia and Latin America

Table 2 bis -

Dependent variable : Frequency of negative growth years (1971 - 2003)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Trust	-0.348***	-0.393***	-0.365***	-0.344***	-0.363***	-0.289***	-0.246***
	(6.63e-05)	(0.000303)	(3.06e-05)	(3.40e-05)	(4.78e-05)	(0.000522)	(0.00207)
Initial GDP per capita (log)	0.0389	-0.00552	0.00355	-3.13e-05	0.00263	0.0490*	0.0654*
	(0.166)	(0.787)	(0.868)	(0.998)	(0.861)	(0.0957)	(0.0713)
Initial population (log)	-0.0225**	-0.0254**	-0.0240**	-0.0253***	-0.0274***	-0.0232***	-0.0285***
	(0.0138)	(0.0285)	(0.0140)	(0.00557)	(0.00287)	(0.00821)	(0.00393)
Public expenditure	0.00289**	0.00324**	0.00327**	0.00281**	0.00303**	0.00237*	0.00287**
	(0.0162)	(0.0178)	(0.0109)	(0.0336)	(0.0381)	(0.0589)	(0.0199)
Openness	-0.000906***	-0.000643**	-0.000635**	-0.000672**	-0.000723**	-0.000967***	-0.00107***
	(0.00298)	(0.0357)	(0.0276)	(0.0235)	(0.0155)	(0.00300)	(0.00520)
Polity IV	-0.00845*					-0.00871*	-0.00818*
	(0.0560)					(0.0526)	(0.0859)
Constraint on the executive		0.00132					
		(0.796)					
Schoolin years			-0.00317			-0.00308	-0.00476
			(0.679)			(0.652)	(0.490)
Ethnic fractionnalization				0.0852*		0.0883**	0.0849*
				(0.0806)		(0.0496)	(0.0518)
Ethnolinguistic fractionalization					0.0796		
					(0.164)		
Constant	0.179	0.542*	0.465*	0.466**	0.478**	0.0855	-0.0374
	(0.520)	(0.0746)	(0.0522)	(0.0344)	(0.0270)	(0.740)	(0.896)
Regional dummies	-	-	-	-	-	-	Yes
Observations	47	47	47	47	47	47	47
R-squared	0.564	0.506	0.506	0.530	0.527	0.593	0.632

Robust p values in parentheses
*** p<0.01, ** p<0.05, * p<0.1
OLS regressions
Regional dummies are included for Africa, Asia and Latin America

Table 3 -

Dependent variable : Frequency of downturns (1971 - 2003)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Trust	-0.333***	-0.339***	-0.326***	-0.340***	-0.325***	-0.340***	-0.256***
	(5.17e-05)	(4.95e-05)	(0.000179)	(8.93e-05)	(0.000147)	(6.92e-05)	(0.000161)
Initial GDP per capita (log)		0.00348	-0.00122	0.00672	-0.00147	0.00666	0.0227
		(0.711)	(0.928)	(0.646)	(0.913)	(0.657)	(0.337)
Initial population (log)			-0.00659	-0.00371	-0.00717	-0.00381	-0.00580
			(0.448)	(0.633)	(0.418)	(0.668)	(0.547)
Public expenditure				0.00200		0.00200	0.00240
				(0.189)		(0.207)	(0.200)
Openness					-4.11e-05	-7.28e-06	2.59e-05
					(0.856)	(0.974)	(0.923)
Constant	0.219***	0.191**	0.292	0.159	0.302	0.161	-0.0244
	(1.28e-08)	(0.0268)	(0.123)	(0.436)	(0.115)	(0.479)	(0.931)
Regional dummies	-	-	-	-	-	-	Yes
Observations	47	47	47	47	47	47	47
R-squared	0.298	0.298	0.306	0.331	0.306	0.331	0.422

Robust p values in parentheses
*** p<0.01, ** p<0.05, * p<0.1
OLS regressions
Regional dummies are included for Africa, Asia and Latin America

Table 3 bis -

Dependent variable : Frequency of downturns (1971 - 2003)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Trust	-0.301***	-0.373***	-0.306***	-0.326***	-0.333***	-0.248***	-0.197**
	(0.000144)	(0.000239)	(0.000372)	(7.16e-05)	(9.09e-05)	(0.00558)	(0.0186)
Initial GDP per capita (log)	0.0527*	-0.00318	0.0179	0.00762	0.00834	0.0671**	0.0912**
	(0.0713)	(0.869)	(0.424)	(0.609)	(0.594)	(0.0444)	(0.0157)
Initial population (log)	-0.00190	-0.00775	-0.00328	-0.00417	-0.00480	-0.00163	-0.00916
	(0.833)	(0.436)	(0.718)	(0.636)	(0.611)	(0.855)	(0.363)
Public expenditure	0.00156	0.00184	0.00198	0.00183	0.00192	0.00135	0.00186
	(0.262)	(0.256)	(0.206)	(0.242)	(0.252)	(0.323)	(0.200)
Openness	-0.000314	-5.72e-05	-2.01e-05	-2.28e-05	-3.69e-05	-0.000351	-0.000546
	(0.220)	(0.812)	(0.930)	(0.923)	(0.884)	(0.188)	(0.145)
Polity IV	-0.00934**					-0.00953**	-0.00976**
	(0.0453)					(0.0395)	(0.0468)
Constraint on the executive		0.00464					
		(0.364)					
Schoolin years			-0.00571			-0.00634	-0.00980
			(0.496)			(0.469)	(0.213)
Ethnic fractionnalization				0.0302		0.0322	0.0370
				(0.605)		(0.557)	(0.404)
Ethnolinguistic fractionalization					0.0249		
					(0.756)		
Constant	-0.202	0.283	0.0849	0.146	0.152	-0.309	-0.464
	(0.467)	(0.309)	(0.727)	(0.519)	(0.503)	(0.282)	(0.149)
Regional dummies	-	-	-	-	-	-	Yes
Observations	47	47	47	47	47	47	47
R-squared	0.425	0.347	0.337	0.335	0.333	0.438	0.514

Robust p values in parentheses
*** p<0.01, ** p<0.05, * p<0.1
OLS regressions
Regional dummies are included for Africa, Asia and Latin America

Table 4 - Summary statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Standard deviation of GDP per capita growth rate	47	3.280773	1.557629	1.500631	7.955963
Frequency of negative growth years	47	.1611863	.1112699	0	.4545455
Probability of a downturn	47	.1177361	.0972014	0	.3529412
Trust	47	.3052236	.1592841	.0502236	.6389233
Initial GDP per capita (log)	47	8.766867	.8585537	6.278527	9.993028
Initial population (log)	47	9.746578	1.423093	7.350019	13.64408
Public expenditure	47	19.92194	8.182375	7.975027	57.18816
Openness	47	53.89566	40.45806	13.36057	266.4069
Schooling years	47	6.561369	2.54422	1.980571	11.40629
Polity IV	47	4.858136	5.640032	-7.151515	10
Constraint on the executive	47	4.023856	3.59101	-9.393939	7
Ethnic fractionnalization	47	.314722	.2321382	.001998	.930175
Ethnolinguistic fractionalization	47	.2066988	.2350283	0	.8357907

Table 5 - GSS summary statistics

Sex	pct.	*Total family income*	pct.	*Religion*	pct.
Male	46.65	$1000 or less	0.80	Protestant	59.38
Female	53.35	$1000 to 2999	1.33	Catholic	27.05
		$3000 to 3999	1.44	Jewish	0.78
Employment status	pct.	$4000 to 4999	1.37	None	10.32
Full time	48.75	$5000 to 5999	1.82	Other	1.58
Part time	8.76	$6000 to 6999	1.39	Buddhism	0.20
Self employed	12.41	$7000 to 7999	1.89	Hinduism	0.03
Retired	11.16	$8000 to 9999	3.09	Moslem	0.02
Housewife	12.42	$10000 to 14999	10.13	Orthodox-Christian	0.04
Students	2.56	$15000 to 19999	9.17	Christian	0.43
Unemployed	2.42	$20000 to 24999	10.32	Inter-Nondenominational	0.17
Other	1.51	$25000 or more	57.24		

	Mean	Std. Dev.	Min	Max
Age	44.97434	16.80427	18	89
Age squared	2305.051	1687.455	324	7921
Highest year of school completed	13.34829	2.83094	0	20

Observations : 11769

Source : GSS 1978-2006

Table 6 - Share of trusty Americans by origin country

Origin country	Most peolpe can be trusted	Observations
Austria	.454545	55
Canada	.414384	292
China	.666667	9
Denmark	.465517	116
Great Britain	.505296	2,927
Finland	.48	50
France	.422343	367
Germany	.447722	3,051
Greece	.391304	46
Hungary	.47619	63
Ireland	.447356	2,175
Italy	.374026	770
Japan	.448276	29
Mexico	.327044	318
Netherlands	.393822	259
Norway	.558824	306
Philippines	.333333	12
Poland	.434343	396
Spain	.367521	117
Sweden	.477778	270
Switzerland	.513514	74
India	.166667	12
Portugal	.388889	36
Belgium	.526316	19
	Total	11,769

Source : GSS 1978-2006

Tabel 7 - Marginal country effects

Dependent variable : Trust

Austria	-0.0989***	Japan	-0.109***
	(0)		(0)
Canada	-0.118***	Mexico	-0.151***
	(0)		(0)
China	0.0934***	Netherlands	-0.131***
	(0)		(0)
Denmark	-0.103***	Norway	Reference
	(0)		
Great Britain	-0.0806***	Philippines	-0.202***
	(0)		(0)
Finland	-0.0869***	Poland	-0.121***
	(0)		(0)
France	-0.119***	Spain	-0.154***
	(0)		(0)
Germany	-0.101***	Sweden	-0.0901***
	(0)		(0)
Greece	-0.162***	Switzerland	-0.0718***
	(0)		(0)
Hungary	-0.0665***	India	-0.330***
	(0)		(0)
Ireland	-0.103***	Portugal	-0.157***
	(0)		(0)
Italy	-0.177***	Belgium	-0.00569
	(0)		(0.686)
Observations	11769		
Pseudo R2	0.0513		

Robust p values in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Probit estimation

Tabel 7 bis -

Dependent variable :	Trust	
	Age	0.0100***
		(1.12e-05)
	Age squared	-6.27e-05***
		(0.00608)
	Sex (male)	0.0213***
		(0.00131)
	Highest year of school completed	0.0379***
		(0)
Employment status	Unemployment	Reference
	Full time	0.0256
		(0.366)
	Part time	0.0772**
		(0.0159)
	Self employed	0.0425
		(0.216)
	Retired	-0.00858
		(0.735)
	Housewife	0.0200
		(0.247)
	Students	0.0773**
		(0.0398)
	Other	-0.0711**
		(0.0325)
Income group	$0 to 999	Reference
	$1000 to 2999	0.0789
		(0.360)
	$3000 to 3999	0.0522
		(0.427)
	$4000 to 4999	0.0195
		(0.738)
	$5000 to 5999	0.0414
		(0.535)
	$6000 to 6999	0.0643
		(0.299)
	$7000 to 7999	0.115**
		(0.0490)
	$8000 to 9999	0.0707
		(0.404)
	$10000 to 14999	0.0871
		(0.209)

Tabel 7 bis - (continued)

	$15000 to 19999	0.0968
		(0.131)
	$20000 to 24999	0.110*
		(0.0926)
	$25000 or more	0.123**
		(0.0449)
Religion	None	Reference
	Protestant	0.0367***
		(0.00232)
	Catholic	0.0552**
		(0.0358)
	Jewish	-0.0121
		(0.814)
	Other	0.0175
		(0.438)
	Buddhism	-0.0110
		(0.911)
	Hinduism	0.211
		(0.419)
	Moslem	-0.151
		(0.656)
	Orthodox-Christian	0.0513
		(0.795)
	Christian	-0.0366
		(0.560)
	Inter-Nondenominational	0.0852
		(0.135)
	Observations	11769
	Pseudo R2	0.0513

Robust p values in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Probit estimation

Table 8 - First stage regression

Dependent variable :	Trust
Inherited trust	0.971*
	(0.0573)
Schooling years	0.0263
	(0.189)
Polity IV	0.0250**
	(0.0282)
Ethnic fractionalization	-0.0349
	(0.806)
Initial GDP per capita (log)	-0.121**
	(0.0438)
Constant	1.207***
	(0.00631)
Observations	24
R-squared	0.459
F-test for excluded instrument	4.12

Robust p values in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 9 - Instrumental variable estimations

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent vraiable	Standard deviation of GDP per capita growth rate		Frequency of downturns		Frequency of neagtive growth	
Estimation method :	IV	OLS	IV	OLS	IV	OLS
Trust	-2.923*	-1.599	-0.381***	-0.169	-0.627***	-0.186
	(0.0603)	(0.149)	(0.00713)	(0.195)	(0.000306)	(0.124)
Schooling years	0.169	0.106	0.0134	0.00345	0.0251**	0.00435
	(0.195)	(0.367)	(0.234)	(0.713)	(0.0355)	(0.602)
Polity IV	-0.0646**	-0.0855***	0.00415	0.000813	0.00512	-0.00183
	(0.0141)	(0.00949)	(0.164)	(0.814)	(0.314)	(0.696)
Ethnic fractionalization	-0.700*	-0.590	0.0460	0.0636	-0.0252	0.0116
	(0.0829)	(0.199)	(0.313)	(0.121)	(0.705)	(0.808)
Initial GDP per capita (log)	-0.482*	-0.341	-0.0325	-0.00992	-0.0441	0.00290
	(0.0916)	(0.160)	(0.177)	(0.723)	(0.202)	(0.920)
Constant	7.326***	6.146***	0.367**	0.178	0.518**	0.126
	(0.000222)	(0.000470)	(0.0339)	(0.417)	(0.0344)	(0.554)
Observations	24	24	24	24	24	24
R-squared	-	0.580	-	0.293	-	0.216

*** p<0.01, ** p<0.05, * p<0.1
Robust p values in parentheses
In columns 1, 3 and 5, Trust is instrumented by Inherited Trust

Table 10 - Summary statistics for IV estimations

Variable	Obs	Mean	Std. Dev.	Min	Max
Trust	24	.3781115	.1465516	.0707071	.6389233
Inherited trust	24	-.1102121	.0781275	-.33	.0934
Schooling years	24	7.538149	1.962095	3.246	10.29743
Polity IV	24	7.207071	4.707135	-7.151515	10
Ethnic fractionnalization	24	.217775	.1957984	.011928	.71242
Standard deviation of GDP per capita growth rate	24	2.519717	.8552039	1.500631	4.775847
Frequency of negative growth years	24	.1035354	.0592177	0	.2121212
Probability of a downturn	24	.0703109	.0512811	0	.2352941
Initial GDP per capita (log)	24	9.034665	.8852115	6.278527	9.993028