

# The Development of Interpersonal Trust and Its Relation to Economic Performance

Ruben de Blik<sup>+</sup>

**Abstract.** Although the literature on cross-sectional differences for interpersonal trust and their relation to differences in economic performance is quite abundant, the development of interpersonal trust within countries has received no empirical attention yet. Using panel regressions and a new measure for interpersonal trust, the average level of interpersonal trust as found in the European Social Survey, we show that economic and societal circumstances matter for the development of trust. In particular, the process of societal modernization, fueled by economic growth, hampers the development of trust. Although the effect of trust on economic performance is positive elastic, it is overshadowed by this latter process. Societal cohesion is lost when economies modernize, and this can only be recovered by an increase in interpersonal understanding through education or a diminishing of linguistic fractionalization.

JEL-Classification: O11, Z13

**Keywords:** Trust, Modernization, Economic Performance, Panel Regression.

## 1. Introduction

Interpersonal trust, which is most often defined as trust that emerges through "spontaneous sociability", is regarded to be of great importance for explaining cross-sectional differences between the economic development of countries, regions and individuals (Westlund and Adam, 2010). For instance, trust may lower transaction costs or mitigate principal agents problems, and as such allow agents in an economy to focus on more profitable endeavors. Unfortunately, an empirical analysis using longitudinal data has thus far remained absent, which has kept the role trust plays in supporting or instigating economic growth obscure. Most importantly: does an increase in trust in a particular society increase its economic performance, and by how much? Secondly, and interrelated to the first question, it remains unknown which mechanisms affect trust within societies. We adopt the process of societal modernization as described by Durkheim (1984) to model changes in trust. In particular, Durkheim described how modernizing economies show a change in demand for interactions from those based on thick trust to relations based on interpersonal trust (i.e. an endogenous cultural change; Bowles (1998)). However, due to a lack of appropriate governance (through rules, norms and values) such transitions may fail, resulting in a dismantling of social cohesion (anomie) and interpersonal trust.

## 2. Method and Results

We investigate average trust levels in relation to macro-economic performance for 33 countries participating in the European Social Survey (ESS). Survey data is aggregated per country to allow for panel regressions (survey years: 2002-2010, frequency: biannual, country participation: unbalanced). Two models are considered: the first aims at explaining the change of trust, the second relates this change to economic performance, expressed as the gross domestic product per capita. All used variables are logarithmically transformed with base e. As such, model coefficients should be read as elasticities. Country fixed-effects are included for all models. Unless noted otherwise, all variables are sourced from the ESS.

### 2.1. Trust

The ESS presents individuals with the survey statement "Generally speaking, would you say that most people can be trusted, or that you cannot be too careful in dealing with people?" (11 point Likert scale). The weighted mean for each country per survey year is recorded, where a higher mean indicates a higher average

---

<sup>+</sup>Correspondence concerning this article should be addressed to: R. de Blik, Erasmus University Rotterdam, Erasmus School of Economics, P.O. Box 1738, 3000DR Rotterdam, The Netherlands.

*E-mail address:* deblik@ese.eur.nl

trust level. A number of control variables are added for explaining temporal changes of interpersonal trust per country. Firstly, variables that have previously been shown to influence trust are included: the unemployment rate<sup>1</sup>, the average level of education (years), the level of GDP per capita, the percentage of people speaking the country's official language, and finally a variable measuring income inequality (similar to the GINI-index). The control for the process of modernization, two variables are considered: the percentage of the population living in urban areas, and the homicide level<sup>2</sup>. In particular, the homicide level controls for a specific ail of modernization: a dismantling of social cohesion and an increase in acts of anomie. Stepwise results are posted in Table 1. Focusing on the model that includes all control variables, (5), we can infer that both education and the share of people speaking a country's official language have the highest positive impact on interpersonal trust. As expected, urbanization brings about a demand for individualism and reduces trust. A similar conclusion holds for an increase in anomie through the number of homicides.

## 2.2. Economic Performance

The second model relates the change of interpersonal trust to the change of GDP per capita. A number of additional controls are considered. First, the number of patent applications by country residents<sup>3</sup> is recorded to control for the quality of human capital output. Secondly, the share of females in the labor force, the share of the population living in urban areas as well as the share of service exports and imports (Trade in services) are included to control for the economy's modernity. Finally, the measure of interpersonal trust is considered. Results are reported in Table 2. Furthermore, in column (6) an instrumental variables estimation is presented. As is apparent from Table 1, there is the potential for reverse causality between trust and the GDP per capita. As such, interpersonal trust is instrumented for by the average level of education (which does not seem to affect the dependent variable in Table 1 due to the inclusion of human capital related variables such as the number of patents). Next to this technical justification, we note that previously education has been shown to be an important transmitter of trust (Knack and Zak, 2003). Furthermore, the urban population variable is instrumented for by its 10 year lagged value to specifically model economic effects due to urbanization.

Table 1: Fixed country-effects panel model (2002-2010) results. Robust standard errors in parentheses for models (1) to (6). 2SLS standard errors in parentheses for model (7).

	(a) Log. Interpersonal Trust					(b) Log. GDP per capita	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Unemployment rate	-0.04** (0.02)	-0.01 (0.02)	-0.02 (0.01)	-0.04** (0.02)	0.01 (0.01)	-0.30*** (0.05)	-0.24*** (0.09)
GDP per capita	0.04* (0.02)	0.03 (0.02)	0.07*** (0.02)	0.01 (0.03)	0.04 (0.03)	Average years of education (0.62)	0.57
Average years of education	0.25** (0.12)	0.28** (0.12)	0.25** (0.11)	0.21* (0.12)	0.22* (0.12)	Residential patent applications (0.12)	0.19 (0.09)
Official language	0.18** (0.07)	0.20*** (0.05)	0.16*** (0.05)	0.18** (0.07)	0.18*** (0.04)	Female labor participation (0.76)	2.44*** (0.81)
Income inequality		-0.02*** (0.01)			-0.02** (0.01)	Trade in services (0.16)	0.65*** (0.22)
Urban population			-1.15*** (0.41)		-0.97* (0.55)	Urban population (1.49)	4.88*** (2.71)
Homicide				-0.05* (0.02)	-0.04* (0.03)	Interpersonal trust (0.53)	1.20** (1.36)
R <sup>2</sup>	0.24	0.30	0.32	0.28	0.39	R <sup>2</sup>	0.67
Adj. R <sup>2</sup>	0.17	0.21	0.22	0.20	0.26	Adj. R <sup>2</sup>	0.46
Num. obs.	125	123	125	123	121	Num. obs.	125

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

All coefficients bear the expected signs and magnitudes. As such, we immediately turn to our measure for interpersonal trust. A 1% increase in the average aggregated score for interpersonal trust increases the GDP per capita by more than 1%: the effect of trust on performance appears to be elastic. A straightforward interpretation of this result has previously been suggested by Putnam (2007): trust allows for a positive free-

1 Source: Worldbank.

2 Source: United Nations Office on Drugs and Crime.

3 Source: World Intellectual Property Rights Organization.

rider effect. Not the whole of society has to be more optimistic in terms of trust for it to positively affect the economy: its effect is multiplicative rather than additive. Furthermore, note that an increase in the urban population increases economic performance quite strongly, while our previous model (5) concluded a negative causality between the former variable and interpersonal trust. This renders credible the postulated opposite effect of the development into a modern society on both economic performance (positive, due to more and more highly concentrated specialized labor) and interpersonal relations depending on trust (negative, due to a higher demand for individualism) (Durkheim, 1984).

### 3. Conclusion

We model two interrelated phenomena: the development of interpersonal trust in society, and the relation it has to a country's economic performance. The paper introduces two innovations: it introduces a longitudinal analysis of trust and performance, as well as an implementation of a previously unused theoretical insight: modernization. We find that processes of modernization have a negative effect on interpersonal trust. This either implies that modernization always has a negative effect on interpersonal relations, or that when the speed of modernization exceeds the speed of implementing the appropriate governing rules, norms and values that maintain cohesion falls short (i.e. cannot keep pace). Finally, we relate changes in the level of trust to economic performance. Although an increase in interpersonal trust has a positive effect on performance, the economic effect of modernization as modeled through urbanization exceeds the economic benefits of an increase in interpersonal trust. It appears that the popular adagio "having your cake, and eating it too" cannot be applied when simultaneously investigating economic progress through modernization and interpersonal trust. Cohesion can only be maintained if sufficient investments are made in terms of a society's education, as well as through diminishing linguistic barriers.

### 4. References

- [1] Bowles, S. 1998, 'Endogenous Preferences: The Cultural Consequences of Markets and Other Economic Institutions', *Journal of Economic Literature* **36**(1), 75–111.
- [2] Durkheim, E. 1984, *The division of labor in society*, Free Press, New York.
- [3] Knack, S. Zak, P. J. 2003, 'Building Trust: Public Policy, Interpersonal Trust, and Economic Development', *Supreme Court Economic Review* **10**, 91–107.
- [4] Putnam, R. D. 2007, 'E Pluribus Unum: Diversity and Community in the Twenty-first Century The 2006 Johan Skytte Prize Lecture', *Scandinavian Political Studies* **30**(2), 137–174.
- [5] Westlund, H. Adam, F. 2010, 'Social Capital and Economic Performance: A Meta-analysis of 65 Studies', *European Planning Studies* **18**(6), 893–919.