# Trust in Large Organizations

By RAFAEL LA PORTA, FLORENCIO LOPEZ-DE-SILANES,
ANDREI SHLEIFER, AND ROBERT W. VISHNY*

Several recent studies, including those in Diego Gambetta (1988), as well as studies by James Coleman (1990), Robert Putnam (1993), and Francis Fukuyama (1995), argue that trust or social capital determines the performance of a society's institutions. These studies view trust or social capital as a propensity of people in a society to cooperate to produce socially efficient outcomes and to avoid inefficient noncooperative traps such as that in the prisoner's dilemma. Putnam (1993), for example, examines social capital as a determinant of the performance of local governments across Italian regions. He demonstrates that the Italian regions in which the public actively participates in civic activities (viewed as manifestations of a high tendency to cooperate) are also the regions in which local governments exhibit higher objective measures of performance, such as the delivery of public goods. Fukuyama (1995) argues further that high trust among citizens accounts for the superior performance of all institutions in a society, including firms.

In this paper, we provide an overview of the existing theory of trust, develop some of its implications, and test them on a cross section of countries. We find a striking confirmation of the theory in the data. We also ask: what are the forces that encourage the formation of trust? According to Putnam (1993), hierarchical religion discourages "horizontal" ties between people and hence the formation of trust. Indeed, we find a strong negative association between trust and the dominance of a strong hierarchical religion in a country, most notably Catholicism.

## I. Argument

Economists have developed two views of trust as a tendency to cooperate. One view, rooted in repeated game theory, holds that trust is a prior that an opponent is cooperative rather than fully rational (e.g., plays only tit-for-tat in a repeated prisoner's dilemma). A higher prior in a repeated prisoner's dilemma leads to a greater likelihood and duration of cooperation (David Kreps et al., 1982). Another view, rooted in economic experiments, holds that people cooperate even in one-shot encounters, such as the dictator game or the ultimatum game (Colin Camerer and Richard Thaler, 1995). These experiments suggest that people expect certain fair or cooperative behavior of their opponents even when they do not expect to see them again. Both of these views suggest that higher trust between people in a population should be associated with greater cooperation.

These views of trust share an important implication, namely, that trust should be more essential for ensuring cooperation between strangers, or people who encounter each other infrequently, than for supporting cooperation among people who interact frequently and repeatedly. In the latter situations, such as families or partnerships, reputations and ample opportunities for future punishment would support cooperation even with low levels of trust. This implies that trust is most needed to support cooperation in large organizations, where members interact with each other only infrequently because they are only rarely involved in joint production. Take, for example, administrative interactions between members of different departments in a university, or interagency task forces in the government. Here cooperation is less sustainable without trust

because interactions are too few to allow reputations to develop.

One such large organization is the government, where bureaucrats must cooperate with a large number of other bureaucrats whom they encounter only infrequently, as well as with private citizens they may never see again, to produce "public goods." Significant trust is then needed to ensure cooperation. Local governments in Italy might perform better in high-trust regions because trust enables individual bureaucrats to cooperate better with each other and with private citizens, making government more effective.

Civic groups or associations, where participation is largely voluntary and success depends on many people cooperating, may also rely on trust for their success. Putnam (1993) actually *measures* social capital by participation in civic groups and associations, even though participation must itself be a consequence of some underlying beliefs about the behavior of other people in the society.

Finally, corporations are also large organizations that would benefit from trust among their employees. Fukuyama (1995) stresses the need for cooperation between strangers for the success of large firms, and the dependence of such cooperation on trust. He contrasts large public firms in high-trust countries to smaller family firms that prevail in low-trust societies.

## II. Evidence

We test the hypotheses developed above on a cross section of countries. We are interested in the effect of trust on the performance of large organizations, measured here by government effectiveness, participation in civic organizations, size of the largest firms relative to GNP, and the performance of a society more generally. Our measure of trust comes from the World Values Survey, which in the early 1980's and again in the early 1990's surveyed 1,000 randomly selected people in each of 40 countries. One of the questions was: "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?" The percentage of

people answering yes is our measure of trust within a country (see also Stephen Knack and Philip Keefer, 1996). The correlation across countries between trust in the 1980's and in the 1990's is 0.91, so we use the later, more complete, data. The highest-trust countries are in Scandinavia, where almost two-thirds of the respondents believe that strangers can be trusted; many of the lowest-trust countries are in Latin America.

Here we briefly summarize our variables; Table 1 provides details. For government effectiveness we use (subjective) estimates from investor surveys of the efficiency of the judicial system, corruption, bureaucratic quality, and tax compliance (a proxy for effectiveness of the tax authorities). For civic participation we use the extent of participation in civic activities and in professional associations. To measure the relative success of large firms, we use total sales of the largest 20 publicly traded firms (by sales) in a country relative to its GNP. Some of our measures of social success proxy for the effectiveness of government only; others reflect the success of other institutions in the society as well. We look at education (high-school graduates relative to the relevant population and educational adequacy as estimated by a business group), health (logarithm of infant mortality rate), infrastructure (an estimate of its quality by one business group and an estimate of its adequacy by another), and two general measures of social success: per capita GDP growth between 1970 and 1993 and (the logarithm of) inflation over the same period. Our goal is to establish the robustness of the results through the use of multiple variables and data sources; we have looked at many other variables as well, with similar results.

Table 2 presents the regressions of our measures of performance of large organizations on trust, controlling for the log of 1994 per capita GNP. In most regressions, we have fewer than 40 observations because we do not have dependent variables for socialist countries. Controlling for per capita GNP reduces the effect of trust, since trust is higher in richer countries. This may cause the effect of trust to be underestimated if trust is an input in the production of wealth. In other (unreported) specifications, we also control for inequality without much

TABLE 1—DESCRIPTION OF THE VARIABLES USED
IN TABLES 2 AND 3

| Variable | Definition |
|---|---|
| Trust in people | Percentage of respondents who answered that most people can be trusted when asked: "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?" Source: *World Values Survey 1990–93* (WVS). |
| Efficiency of the judiciary | Assessment of the "efficiency and integrity of the legal environment as it affects business, particularly foreign firms." Average between 1980 and 1983. Scale from 0 to 10, with lower scores indicating lower efficiency levels. Source: *Business International Corporation* (1984). |
| Corruption | Low ratings if "high government officials are likely to demand special payments and illegal payments are generally expected throughout lower levels of government in the form of bribes connected with import and export licenses, exchange controls, tax assessment, policy protection, or loans." Scale from 0 to 10. Average of the months of April and October of the monthly index between 1982 and 1995. Source: *International Country Risk Guide* (ICRG). |
| Bureaucratic quality | High scores indicate "autonomy from political pressure" and "strength and expertise to govern without drastic changes in policy or interruptions in government services." Scale from 0 to 10, with higher scores for greater efficiency. Average of the months of April and October of the monthly index between 1982 and 1995. Source: ICRG. |
| Tax compliance | Assessment of the level of tax compliance. Scale from 0 to 6, where higher scores indicate higher compliance. Source: *The Global Competitiveness Report 1996* (GCR). |
| Civic participation | Percentage of civic activities in which an average individual participates. The activities included are: (i) social-welfare services for elderly and deprived, (ii) education, art, and cultural activities, (iii) local community affairs, (iv) conservation, environment, ecology, (v) work with youth, (vi) sports or recreation, and (vii) voluntary associations for health. Source: WVS. |
| Participation in professional associations | Percentage of respondents who answered positively when asked if they belonged to professional associations. Source: WVS. |
| Sales' top 20/ GNP | The ratio of sales generated by the top 20 publicly traded firms to GNP for 1994. Firms within a country are ranked by sales. Source: *WorldScope Global 1996* data base. |
| Infrastructure quality | Assessment of the "facilities for and ease of communication between headquarters and the operation, and within the country," as well as the quality of the transportation. Average data for the years 1972–1995. Scale from 0 to 10 with higher scores for superior quality. Source: *BERI's Operations Risk Index.* |
| Adequacy of infrastructure | Average of five scores measuring the extent to which a country's infrastructure meets business needs in each of the following areas: (i) roads, (ii) air transport, (iii) ports, (iv) telecommunications, and (v) power supply. Scale from 0 to 6, where higher scores are for a superior infrastructure. Source: GCR. |
| Log infant mortality | Logarithm of the number of deaths of infants under one year of age per one thousand live births for 1993 or the most recent year available. Source: *Health-For-All Global Indicators Database.* |
| Completed high school | Percentage of the 1985 male population aged 25 and over that has completed high school. Source: Robert Barro and Jong-Wha Lee (1994). |
| Adequacy of educational system | Assessment of the extent to which the educational system meets the needs of a competitive economy. Score from 0 to 6, where higher scores are for a superior educational system. Source: GCR. |
| Log inflation | Logarithm of the geometric average annual growth rate of the implicit price deflator for the time period 1970–1993. Source: *World Development Report 1995* (WDR95). |

TABLE 1—*Continued.*

| Variable | Definition |
|---|---|
| GDP growth | Average annual growth in per capita GDP for the period 1970–1993. Source: WDR95. |
| Log GNP per capita | Logarithm of the GNP per capita expressed in dollars of 1994 unless otherwise noted. Source: *World Development Report 1996.* |
| Trust in family | Rating based on respondents' answers to how much they trust their families. Scale from 0 to 4. The highest (lowest) rating is awarded when respondents manifest that they trust (distrust) their families. Source: WVS. |
| Hierarchical religion | Percentage of the population of each country that are Roman Catholic, Eastern Orthodox, or Muslim. Sources: *Worldmark Encyclopedia of the Nations 1995, Statistical Abstract of the World 1994.* |
| Ethnolinguistic fractionalization | Probability that two randomly selected persons from a given country will not belong to the same ethnolinguistic group in 1960. Source: *World Handbook of Political and Social Indicators.* |

effect. We interpret the coefficients using a one-standard-deviation change in trust, about 15 percentage points.

The effects of trust on performance are both statistically significant and quantitatively large. Holding per capita GNP constant, a standard-deviation increase in trust raises judicial efficiency by 0.7, the anticorruption score by 0.3, bureaucratic quality by 0.3, and tax compliance by 0.3 of a standard deviation. Putnam's (1993) results for Italy appear to be confirmed worldwide. Furthermore, a standard-deviation increase in trust raises participation in civic activities by 0.7 and participation in professional associations by one standard deviation. The effect of trust on large firms' share of the economy is also large: a one-standard-deviation increase in trust raises that share by 7 percentage points, or half of a standard deviation. These results support Fukuyama's (1995) argument that trust facilitates all large-scale activities, not just those of the government.

Indeed, Fukuyama goes further and argues that, for firms in particular, trust replaces another mechanism of cooperation—the family. He believes that family strength is detrimental to the growth of firms. We can actually test this hypothesis since the World Values Survey asks respondents if they trust their families. When we run the relative share of the top 20 firms on both a measure of trust in strangers and a measure of trust in family, the coefficient on trust in people is 0.654 ($t = 4.1$), and the

TABLE 2—TRUST IN PEOPLE AND PERFORMANCE

| Dependent variable | Independent variables | | | |
|---|---|---|---|---|
| | Log GNP per capita | Trust in people | Intercept | Adjusted $R^2$ [N] |
| *Government Efficiency* | | | | |
| Efficiency of the judiciary | 0.2959 (0.2213) | 8.2093** (1.3652) | 2.2769 (1.7766) | 0.6343 [27] |
| Corruption | 0.9214** (0.1022) | 4.8068** (0.7509) | −2.3608** (0.9050) | 0.7316 [33] |
| Bureaucratic quality | 1.1596** (0.1927) | 3.9797** (1.3544) | −4.0842* (1.6763) | 0.6806 [33] |
| Tax compliance | 0.3595** (0.0913) | 1.7330** (0.5840) | −0.9124 (0.7873) | 0.3540 [32] |
| *Participation* | | | | |
| Civic participation | 0.0127** (0.0038) | 0.1224** (0.0329) | −0.0921** (0.0308) | 0.4614 [33] |
| Participation in professional associations | −0.0072 (0.0099) | 0.3056** (0.0669) | 0.0330 (0.0730) | 0.5492 [33] |
| *Large Organizations* | | | | |
| Sales' top 20/GNP | 0.0103 (0.0325) | 0.4927** (0.1657) | −0.0374 (0.2798) | 0.2433 [26] |
| *Social Efficiency* | | | | |
| Infrastructure quality | 1.0269** (0.1413) | 2.3261** (0.7970) | −3.7162** (1.2331) | 0.6783 [33] |
| Adequacy of infrastructure | 0.5943** (0.0604) | 1.2511** (0.4200) | −1.6559** (0.5837) | 0.7222 [32] |
| Log infant mortality rate | −0.4598** (0.0484) | −1.0283* (0.5176) | 6.9682** (0.4495) | 0.7141 [40] |
| Completed high school | 1.2884** (0.4416) | 10.9714** (3.4633) | −7.4405* (3.5336) | 0.3474 [29] |
| Adequacy of education system | 0.2200** (0.0858) | 1.2334* (0.6771) | 0.8525 (0.7736) | 0.2107 [32] |
| Log inflation | 0.0371 (0.0787) | −3.4128** (1.1502) | 3.1306** (0.6494) | 0.2059 [37] |
| GDP growth | −0.2738† (0.1548) | 2.0266† (1.2152) | 3.5847** (1.3625) | 0.0072 [39] |

*Notes:* Ordinary least-square regressions of the cross section of 40 countries. There are 14 dependent variables classified in four different groups including (i) Government Efficiency, (ii) Participation, (iii) Large Organizations, and (iv) Social Efficiency Coefficients are shown, and Halbert White (1980) corrected standard errors are given in parentheses underneath. The number of observations is given in brackets.

† Statistically significant at the 10-percent level.
\* Statistically significant at the 5-percent level.
\*\* Statistically significant at the 1-percent level.

coefficient on trust in family is −0.563 ($t = −3.1$). Consistent with Fukuyama's argument, strong family ties are bad for the development of large firms.

The last panel of Table 2 presents the results for social outcomes. Trust has a relatively small but significant effect on infrastructure quality and adequacy, a significant effect on infant mortality, and a larger effect on the measures of educational achievement. A one-standard-deviation increase in trust raises the percentage of high-school graduates in the population by one-half of a standard deviation,

and school adequacy by one-third of a standard deviation. Trust is also associated with lower inflation and weakly associated with a higher per capita GNP growth (about 0.3 percent per annum per standard deviation increase in trust). This result for growth was also obtained by Knack and Keefer (1996). In sum, trust enhances economic performance across countries.

### III. Where Does Trust Come From?

Trust may not be truly exogenous; it may increase with good past performance of a society's institutions. According to Putnam (1993), trust is a habit formed during a centuries-long history of "horizontal networks of association" between people, covering both commercial and civic activities. Putnam argues that the independent city-states of Northern Italy encouraged the formation of such horizontal networks, in contrast to the more authoritarian political regimes of the South. Can we measure something even more basic than trust?

Putnam (1993) argues that the Catholic Church, by imposing a hierarchical structure on the society, often in symbiosis with the state, has discouraged the formation of trust: "Vertical bonds of authority are more characteristic of the Italian Church than horizontal bonds of fellowship" (p. 107). His argument can be applied more generally to any dominant, hierarchical, organized religion in a country and hence can be tested empirically across countries.

Specifically, for every country, we consider the percentage of the population belonging to a hierarchical religion, defined as Catholic, Eastern Orthodox, or Muslim. The mean of this variable in the sample is 55 percent, and its correlation with trust is a remarkable −0.61 (see Fig. 1). This correlation (and all of the following results) is driven mostly by the correlation of −0.47 between percentage Catholic and trust, although predominantly Moslem and Eastern Orthodox countries have very low trust as well. In Table 3, we use this hierarchical-religion variable as an independent variable to explain organizational performance. Holding per capita income constant, countries with more dominant hierarchi-
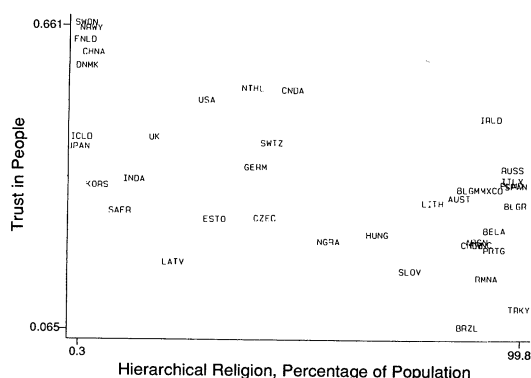
FIGURE 1. TRUST IN PEOPLE PLOTTED AGAINST
THE PERCENTAGE OF THE POPULATION BELONGING
TO A HIERARCHICAL RELIGION

TABLE 3—RELIGION AND PERFORMANCE

| Dependent variable | Independent variables | | | |
| --- | --- | --- | --- | --- |
| | Log GNP per capita | Hierarchical Religion | Intercept | Adjusted $R^2$ [N] |
| *Government Efficiency* | | | | |
| Efficiency of the | 0.7420** | −0.0233** | 2.4936 | 0.5245 |
| judiciary | (0.2357) | (0.0067) | (2.4613) | [27] |
| Corruption | 1.0740** | −0.0148** | −1.1331 | 0.7025 |
| | (0.1171) | (0.0051) | (1.2028) | [33] |
| Bureaucratic quality | 1.2376** | −0.0214** | −2.1445 | 0.7583 |
| | (0.1493) | (0.0054) | (1.5465) | [33] |
| Tax compliance | 0.3985** | −0.0088** | −0.1415 | 0.4335 |
| | (0.0767) | (0.0029) | (0.6727) | [32] |
| *Participation* | | | | |
| Civic participation | 0.0164** | −0.0003** | −0.0589* | 0.4106 |
| | (0.0035) | (0.0001) | (0.0274) | [33] |
| Participation in | 0.0002 | −0.0010** | 0.1393 | 0.5256 |
| professional associations | (0.0105) | (0.0002) | (0.1104) | [33] |
| *Large Organizations* | | | | |
| Sales' top 20/GNP | 0.0370 | −0.0020** | 0.0077 | 0.3387 |
| | (0.0263) | (0.0006) | (0.2668) | [26] |
| *Social Efficiency* | | | | |
| Infrastructure | 1.0725** | −0.0172** | −2.3035* | 0.7835 |
| quality | (0.0955) | (0.0039) | (0.8967) | [33] |
| Adequacy of | 0.6252** | −0.0057* | −1.1572* | 0.7480 |
| infrastructure | (0.0550) | (0.0021) | (0.5270) | [32] |
| Log infant | −0.5044** | 0.0016* | 6.9040** | 0.6919 |
| mortality rate | (0.0473) | (0.0018) | (0.4794) | [40] |
| Completed high | 1.7590** | −0.0409** | −5.4915 | 0.3814 |
| school | (0.4573) | (0.0142) | (4.3376) | [29] |
| Adequacy of | 0.2680** | −0.0016 | 0.9735 | 0.1597 |
| education system | (0.0820) | (0.0028) | (0.7854) | [32] |
| Log inflation | −0.0915 | 0.0087* | 2.5343** | 0.0991 |
| | (0.0784) | (0.0035) | (0.7381) | [37] |
| GDP growth | −0.1944 | −0.0030 | 3.8230* | −0.0206 |
| | (0.1622) | (0.0069) | (1.6884) | [39] |

*Notes:* There are 14 dependent variables classified in four different groups including (i) Government Efficiency, (ii) Participation, (iii) Large Organizations, and (iv) Social. We report coefficients for heteroscedasticity-corrected OLS (White, 1980). Standard errors are shown in parentheses. The number of observations is given in brackets.

\* Statistically significant at the 5-percent level.
\*\* Statistically significant at the 1-percent level.

cal religions have less efficient judiciaries, greater corruption, lower-quality bureaucracies, higher rates of tax evasion, lower rates of participation in civic activities and professional associations, a lower level of importance of large firms in the economy, inferior infrastructures, and higher inflation. The results for infant mortality, educational achievement, and growth are less clear-cut. Still, the evidence that hierarchical religions are bad for the performance of large organizations is strong. We have also run two-stage specifications, in which hierarchical religion is used as an instrument for trust. The results are similar to those in Table 2 in both magnitude and statistical significance.

This evidence suggests that hierarchical religion and distrust may both reflect some underlying basic "factor" in a society that is detrimental to the performance of large organizations. This factor may reflect dysfunctional institutions in a society, but if so, this is largely a long-term disfunctionality associated in part with a hierarchical religion (and not just with recent events). Interestingly, this factor does not reflect the ethnic heterogeneity in a society, which might be viewed as a source of distrust: the correlation between trust and a standard measure of ethnolinguistic heterogeneity is only −0.12, and the inclusion of that measure in the regressions in Table 2 does not change the importance of trust.

## IV. Conclusion

Trust promotes cooperation, especially in large organizations. Data on government performance, participation in civic and professional societies, importance of large firms, and overall performance of different societies support this hypothesis. Furthermore, trust is lower in countries with dominant hierarchical religions, which may have deterred the formation of "horizontal networks of cooperation" among people. Despite economists' skepticism (see Robert Solow, 1995), theories of trust hold up remarkably well when tested on a cross section of countries.

## REFERENCES

**Barro, Robert and Lee, Jong-Wha.** Unpublished data set for a panel of 138 countries, Harvard University, 1994.

*BERI's operations risk index.* Business environmental risk intelligence indicators obtained by the Center for Institutional Reform and the Informal Sector (IRIS), University of Maryland, various years.

**Business International Corporation.** *Introduction to the Country Assessment Service.* New York: Business International Corporation, 1984.

**Camerer, Colin and Thaler, Richard H.** "Anomalies: Ultimatums, Dictators, and Manners." *Journal of Economic Perspectives*, Spring 1995, *9*(2), pp. 209–20.

**Coleman, James.** *Foundations of social theory.* Cambridge, MA: Harvard University Press, 1990.

**Fukuyama, Francis.** *Trust.* New York: Free Press, 1995.

**Gambetta, Diego,** ed. *Trust: Making and breaking cooperative relations.* Cambridge: Blackwell, 1988.

*The global competititive report 1996.* Geneva, Switzerland: World Economic Forum, 1996.

*Health-for-All global indicators database.* Geneva, Switzerland: World Health Organization, 1996.

*International country risk guide.* East Syracuse, NY: Political Risk Services, Institutional Reform and Informational Sector, various years.

**Knack, Stephen and Keefer, Philip.** "Does Social Capital Have an Economic Payoff? A Cross-Country Investigation." Mimeo, University of Maryland, 1996.

**Kreps, David; Milgrom, Paul; Roberts, John and Wilson, Robert.** "Rational Cooperation in the Finitely Repeated Prisoner's Dilemma." *Journal of Economic Theory*, August 1982, *27*(2), pp. 245–52.

**Putnam, Robert.** *Making democracy work: Civic traditions in modern Italy.* Princeton, NJ: Princeton University Press, 1993.

**Solow, Robert.** "But Verify," Review of Fukuyama. *New Republic*, 11 September 1995, p. 36.

*Statistical abstract of the world 1994.* New York: Gale Research, 1994.

**White, Halbert.** "A Heteroskedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity." *Econometrica*, May 1980, *48*(4), pp. 817–38.

*World development report 1995.* New York: Oxford University Press, 1995.

*World development report 1996.* New York: Oxford University Press, 1996.

*World handbook of political and social indicators III, 1948–1982 (ICPSR 7761).* Ann Arbor, MI: Inter-university Consortium for Political and Social Research, 1983.

*World value survey, 1981–1984 and 1990–1993 (ICPSR 6160).* Ann Arbor, MI: Inter-university Consortium for Political and Social Research, 1994.

*Worldmark encyclopedia of the nations 1995,* 8th Ed. Detroit, MI: Gale Research, 1996.

*WorldScope global 1996.* Bridgeport, CT: WorldScope Disclosure Partners, 1996.