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The not so dark side of trust: Does trust increase the size of the shadow economy?

J. D'Hernoncourt and P.-G. Méon

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1. Introduction

Much of the economic activity around the world does not take place in the official legal system, but in the informal or shadow sector instead. What De Soto (1989) dubbed the other path thus provides a livelihood and an access to otherwise unaffordable goods and services to many individuals who are excluded from the formal sector. At the same time, as Schneider and Enste (2000) point out, the shadow economy may also have wider effects, either by attracting productive resources or because a share of the income earned in the shadow economy is spent in the formal sector.[1] It also affects public policies, by affecting tax revenues or congesting public goods, and also by imposing a margin of error on economic indicators. The resulting underground or shadow economy furthermore represents a sizeable share of the economy, and not only in the developing world. Schneider (2005a, 2005b, 2007)

reports that the shadow economy amounts on average to 39 percent in developing countries, and still tallies 16 percent of official output in OECD countries.

Given the prominence of the informal sector, its determinants have unsurprisingly attracted a lot of attention. Since De Soto's (1989) study, the dominant view is that participating in the informal sector is a way to escape heavy taxation and cumbersome regulations. This view has found repeated empirical support, for instance in Johnson et al. (1997, 1998), Friedman et al. (2000), or Dreher and Schneider (2006).

In that view, the role of culture is either overlooked or minimized. Yet, whereas culture was long neglected in economic studies, it is now making a come back. In particular, the recent literature on generalized trust now emphasizes its economic pay-offs. That literature has thus repeatedly observed that countries where people are more trusting enjoy higher incomes and grow faster, like for instance Knack and Keefer (1997), Zak and Knack (2001), Beugelsdijk et al. (2004), or Tabellini (2005). Trusting countries even enjoy greater life satisfaction, as observed by Bjørnskov (2003).

Most of all, trust is bound to play a special role in the informal sector. First, trust can be a substitute to official contracts. As transactions in the shadow economy are by definition undeclared, agents who carry shadow transactions cannot rely upon the formal legal system to enforce agreements or settle disputes. This lack of legal protection may indeed be one of the main costs of informality, as De Soto (1989) or Loayza (1996) argue. In this context, trust may appear as a substitute to formal contracts. Namely, agents who trust each other may carry out transactions that would otherwise be impossible outside the formal legal system. According to this view, one should therefore expect trust to increase the size of the formal sector.

On the other hand, if generalized trust extends to the state, it may as well have the opposite effect. Trust has for instance been found to be positively associated with tax morale by Wintrobe (2001), Torgler (2003) or Torgler and Schneider (2007). If the shadow economy is a form of tax evasion, then one should expect its size to be negatively impacted by trust.

Which effect dominates is an empirical matter. This is why the present paper investigates the relationship between trust and the shadow economy. That investigation contributes to the literature in several ways. First, it puts forward an additional determinant of the size of the shadow economy. Johnson et al. (1997, 1998) or Friedman et al. (2000), or more recently Dreher and Schneider (2006), have emphasized the impact of development,

[1] Schneider and Enste (2000) report that up to two-thirds of the income earned in the shadow economy are

regulations, and institutional quality on the size of the shadow economy. They have however not investigated the impact of trust. Moreover, the present investigation also provides some new information on the kind of transactions that dominate the shadow economy. Namely, if informal transactions consist of spot small-scale deals, trust should matter little in the shadow economy. On the other hand, if transactions are more complex, trust may indeed play a facilitating role. Only in the latter case should one expect trust to be positively associated with the size of the shadow economy.

Second, determining the relationship between trust and the shadow economy also improves our knowledge of the effects of trust. It thus sheds light on the extent to which the effects of the shadow economy spill over the boundaries of the official sector. It also hinges on whether or not an informal institution, like trust, is a substitute or a complement to the official legal system. In this respect, it should also contribute to our understanding of the interplay of law and economic activities.

In a nutshell, we find robust evidence that trust is negatively correlated with the size of the shadow economy. This conclusion resists to the inclusion of a large set of variables controlling for the level of economic development, public policies, and the quality of the institutional and legal system. We moreover provide evidence that it is not driven by endogeneity, and that causality runs at least partly from trust to the size of the shadow economy. We also observe that the relationship is stronger in developing countries. Finally, we find evidence that it is not driven by trust in the government, which plays an independent role.

To reach those conclusions, the rest of the paper is organized as follows. The next section describes the determinants of the shadow economy that are used in our analysis. Section 3 describes our data and our main finding. The following section provides robustness checks. Section 5 shows that our main finding indeed pertains to generalized trust, as opposed to trust in the government. Section 6 concludes.

immediately spent in the formal sector, according to German estimates.

2. The measure of the shadow economy and its determinants

In this section, we describe the main estimates of the shadow economy that we used, then present explanatory variables, starting with trust then moving to control variables. We discuss their expected impact on the shadow economy.

2.1. Measuring the shadow economy

The largest existing dataset on the size of the shadow economy is provided by Schneider (2005a, 2005b, 2007), who calculates the size of the shadow economy of 145 countries, including developing, transition, and highly developed OECD countries, over the period 1999 to 2003. We therefore use that dataset as our workhorse measure of the shadow sector.[2]

Schneider (2005a, 2005b, 2007) estimated the relative size of the shadow economy with the DYMIMIC method (dynamic multiple causes, multiple indicators). He employed variables such as direct and indirect taxation, custom duties, government regulations, the rate of unemployment, growth rate of real GDP, and currency circulation. In order to calibrate absolute figures of the size of the shadow economies from the relative DYMIMIC estimation results, Schneider used previous estimates for a number of countries (e.g. Australia, Austria, Germany, Hungary, Italy, India, Peru, Russia and the United States) derived employing the currency demand method.[3]

2.2. Trust

To measure trust, we chiefly resort to the trust index provided in the latest vintage of the World Values Survey, which provides data for the 1999-2004 period and eighty countries.[4] This index is simply equal to the share of survey respondents in each country who answer affirmatively to the question "Generally speaking, would you say that most people can be trusted or that you need to be very careful when dealing with people?". This index is the standard measure of trust used in the empirical cross-country literature, be it as an explanatory variable, like in Knack and Keefer (1997), Zak and Knack (2001), or Beugelsdijk et al. (2004), or as a dependent variable, like in Bjørnskov (2006). Fehr et al. (2003) have moreover found that survey-based trust measures can be good predictors of subjects'

[2] We test for the robustness of our results by employing alternative estimates of the shadow economy below.
[3] For the sources of these external estimates see Schneider (2005b, page 21).

behaviour in trust games. Sapienza et al. (2007) refined Fehr et al.'s (2003) finding, by running a modified trust game, where the sender was asked not only to answer the standard trust question but also to give his/her expectation of the receiver's trustworthiness. They confirmed that the answer to the trust question was a good predictor of the quantity sent in the trust game. More to the point, they found that it was highly correlated with the sender's expectation of the receiver's trustworthiness. Those recent findings clearly support the interpretation of the trust measure as a measure of the belief in others' trustworthiness, which is what generalized trust really means.

It is not obvious at first glance that trust should affect the size of the shadow economy. Indeed, trust is a cultural factor, and many economists would be sceptical about its impact on the economic activity in general and on the informal sector in particular. For instance, De Soto (1989, p.185) argues that "although no one denies the relative importance of social, cultural, or ethnic factors, we simply have not found any evidence to bear out the theory that they explain why a large sector of the population operates outside the law".

However, the very literature that emphasizes the legal and regulatory determinants of the shadow economy also implicitly suggests that trust should be associated with a larger shadow sector. Namely, that literature emphasizes that in order to evade taxes and regulations, informals also have to forego the benefits of the law, which increases their transaction costs. Thus, they cannot use the contract system, which is one of the main costs of informality that De Soto (1989) points out.

Since informals cannot sign formal enforceable contracts, and cannot therefore resort to courts, they therefore have to rely on oral agreements. By the same token, long-term commitments and complex transactions are much riskier to them. This also prevents informals from offering collaterals. Indeed, their property rights on those collaterals are too insecure. Moreover, those collaterals could not be seized if needed, since there would be no courts to enforce such a decision. Transactions are therefore limited either to simple spot transactions or to a network consisting of relatives or people who have been known for long enough.

In such a context, trust may simply be a substitute to the formal legal system. Fukuyama (1995), while acknowledging the role of formal contracts and property rights, thus argues that social capital could cut down transaction costs. This contention has since then been backed by the empirical work on trust of Knack and Keefer (1997) and Zak and Knack (2001). As Knack and Keefer (1997) stress, trust provides a substitute, admittedly

[4] We also test for the robustness of our findings by employing alternative measures of trust below.

imperfect, for government-backed property rights or contracts where they are not provided by the government, either because it is unable or unwilling to do it. Guiso et al. (2004) apply the same reasoning to financial transactions.

What applies to whole societies should also apply to segments of those societies, especially those where the formal system is of little help. The shadow economy is precisely by definition a sector where no formal substitute is available. As a consequence, one may contend that by reducing transaction costs, trust may make transactions in the informal sector easier. In a more positive version of the same argument, one may also argue that if trust is low, then it may be profitable to pay the cost of formality, and switch to the formal sector. Trust should therefore positively correlate with the size of the shadow economy.

A negative relationship may however also be expected, whose intuition stems from the literature on tax morale. This intuition rests on the view that informality is a form of tax evasion. Most theories of the shadow economy underline that evading taxes is one of the main benefits of informality. This is for instance the case of Marcouiller and Young (1995), Loayza (1996), Azuma and Grossman (2002), or Dabla-Norris et al. (2008).

At the same time, it is well-established that the propensity to pay taxes is far larger than what it should be given the probability to get caught when not paying. That paradox is explained by individuals' tax morale. Now, trust is related to tax morale. Thus, Wintrobe (2001) and Torgler (2003, 2005) both argue that agents will be more prone to pay taxes if they trust their fellow tax-payers to do the same, and if they trust the state to use tax revenues to finance public goods. In the words of public goods experiments, and Ledyard (1995), trust could be one of the systemic factors that induce agents to increase their contributions. In line with that contention, Capra et al. (2008) observed that an index of trust measures was a good predictor of cooperation in a public good game. Outside the lab, Torgler (2003, 2005) repeatedly observed a positive correlation between trust and tax morale. Using a survey conducted in Albania, Gërxhani (2004b) similarly reports an impact on the propensity to evade taxes of respondents' attitudes towards informal institutions, especially if formal and informal institutions are perceived to clash. Torgler and Schneider (2007) moreover report a negative correlation between tax morale and the size of the shadow economy.

As a consequence, if the shadow economy is a form of tax evasion, and since trust increases tax morale, then the shadow economy should be negatively related to trust. Feld and

Larsen (2005) accordingly observe a relationship between values and the probability to participate in the shadow economy in a survey of German citizens. On a more general plane,

To sum up, the relationship between trust and the shadow economy may a priori be either inexistent, positive, if the trust is a substitute to the formal legal system, or negative, if the tax evasion mechanism dominates.

2.3. Control variables

We control for the usual determinants of the shadow economy that have previously been used in the literature. Namely, we thus follow Johnson et al. (1998) and Friedman et al. (2000), and consider four groups of control variables measuring taxation, regulation, the legal system, and corruption.

Taxation is measured by the Fraser Institute index of marginal tax rate. It ranges from zero to ten, larger values reflecting less taxation. Although it is mostly stated that marginal tax rates should be positively correlated with the size of the shadow economy, some argue that it might be the other way around (see Johnson et al., 1998, and Friedman et al., 2000). Their line of reasoning is that higher taxes result in better public goods and services, including a better legal system, which in turn provide an incentive to operate in the formal system. The sign of the relationship is therefore undetermined.

Regulation is assessed thanks to the Heritage Foundation's Business Freedom index. That index ranges from 100, free, 0 burdensome regulation. As more cumbersome regulations are assumed to drive entrepreneurs underground, we expect this index to be negatively correlated with the size of the underground economy.

The legal system is taken into account thanks to the property rights index of the Heritage Foundation. It measures the risk of expropriation in a country and ranges from 0 to 100. A larger value implies a greater protection of property rights. As a more efficient legal system should be an incentive to operate in the formal economy, the predicted sign of the property right index is negative.

Corruption is measured by the corruption perceptions index published by Transparency International. That index measures corruption on a zero-to-ten scale, where a high score signals probity. As a corrupt bureaucracy increases the cost of remaining formal, this index is expected to exhibit a negative sign.

Finally, we also control for the level of economic development. We therefore use the log of per capita GPD as an additional control variable. That data was retrieved from the Penn World Tables 6.2 dataset.

To maximise the size of our sample, we focus mainly on the latest year for which the shadow economy data is available, namely 2002-2003. We accordingly used contemporaneous vintages of explanatory variables. Trust is thus taken from the fourth wave of the World Values Survey. It therefore corresponds to the 1999-2004 period. The two indices published by the Heritage Foundation are available for 2004. The Fraser Institute's taxation index is for 2003. GDP per capita is measured for 2003. Overall, merging those datasets left us with a cross-section of 54 to 65 observations to run our regressions, whose descriptive statistics can be found in table A1 of the appendix.

3. Findings

To get a first insight in the relationship between trust and the shadow economy, Figure 1 plots the size of the shadow economy versus trust. Figure 1a plots raw shadow economy figures. Figure 1b plots the partial association between the shadow economy and trust, when the shadow economy is corrected for GDP per capita, but both scatter plots look alike. They indeed both suggest a negative association between the size of the shadow economy and trust.

Figure 1: Shadow economy vs. trust

Fig.1a: Raw shadow economy

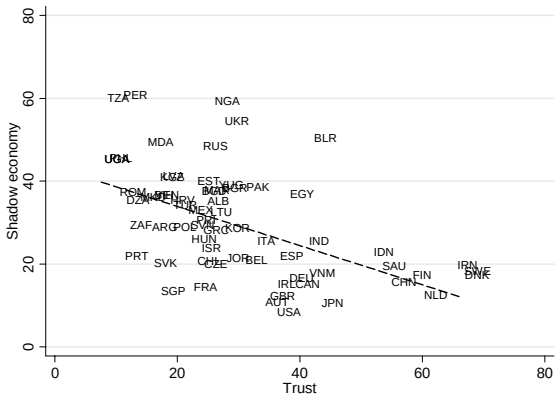
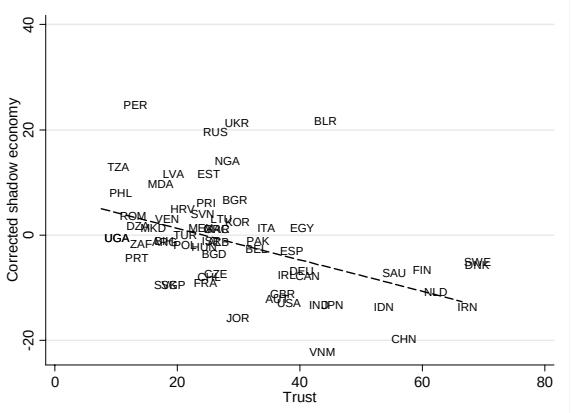


Fig.1b: Shadow economy corrected for GDP per capita



To measure more precisely the impact of trust on the size of the shadow economy, we first ran a simple bivariate regression. We then tested trust against each control variable separately. The shadow economy was therefore regressed on trust and taxation, trust and

regulation, trust and the legal system, and trust and corruption. Namely, we added trust to each bivariate regression performed in Friedman et al. (2000).

However, the size of the shadow economy is also correlated with the level of development. We therefore also ran each regression again with per capita GDP among the regressors.

The results of those regressions are displayed in table 1 below. In those regressions, control variables always exhibit the predicted sign. Namely, a larger per capita GDP is associated with a smaller underground economy, and more taxation with a smaller one (as the empirical results of Friedman et al., 2000 or Johnson et al., 1998 suggest). A more cumbersome regulation and more corruption increase the shadow sector, while a better protection of property rights decreases it. Those coefficients are significant, unless GDP per capita is controlled for. However, F tests always indicate that estimated coefficients are jointly significant.

*** Insert table 1 about here ***

The result of interest however pertains to trust. Table 1 confirms that its coefficient is always very significantly negative. It is moreover stable across regressions, even though it is smaller when per capita GDP is included among the regressors. When per capita GDP is controlled for, the other control variables in general become insignificant, but trust remains strongly significant. This is the case of the taxation variable, the regulation variable, and of the corruption variable. The only exception is the legal system variable. Namely, even when per capita GDP is controlled for, safer property rights remain associated with a smaller shadow sector.[5]

We now turn to multivariate regressions. We started by including all control variables in the same regression. This regression is reported in the first column of table 2. Out of the five control variables, only two remain significant, that is per capita GDP and the property rights variable. Both display their predicted sign.

*** Insert table 2 about here ***

[5] One may remark that the coefficient of trust is little affected by the inclusion of those control variables. This suggests that our results are not driven by the relationship between trust and economic freedom observed by Berggren and Jordahl (2006).

Most of all, trust remains significantly and negatively correlated with the size of the shadow economy in that regression. One may also remark that the order of magnitude of that coefficient does not change with respect to previous regressions. Namely, when per capita is controlled for, one more point in the trust score is associated with approximately a third of a point less shadow economy.

The next regression reported in table 2 only includes the control variables that were significant in the previous estimation. It also includes the property rights index among the regressors, because it was marginally rejected at the 10 percent level of significance in the previous regression. This allows increasing the number of observations in the regression. Nevertheless, the coefficients of the regressors remain of the same order of magnitude as in the previous regression. That specification happens to be the same as specification (1.8).

To check the sensitivity of the results to the set of regressors, we used two alternative model-selection methods. First, we used a backward elimination procedure. This method begins by calculating *F* statistics for a model that includes all of the independent variables. The variable showing the smallest contribution to the model is deleted. In the following steps, other variables are deleted one by one until all the variables remaining in the model produce *F* statistics significant at the 0.10 level. That procedure led to the same set of explanatory variables as in regression 2.2.

We also used a forward elimination procedure. This procedure begins with no variables in the model. It then computes for each of the independent variables, the F statistics that reflect the variable's contribution to the model if it is included. The variable that has the largest F statistic is then added to the model. Variables are added one by one to the model until no remaining variable produces an F statistic significant at least at the 50 percent level. The selected model is again the same as in regression 2.2.

We complemented that selection procedure by the related stepwise procedure. This procedure is similar to the forward selection procedure but differs from it insofar as, each time a new variable is added, it verifies that all the already included variables are still significant. Insignificant variables are deleted. Once more, the selected model is the same as in regression 2.2.

One may also remark the order in which variables are included. Namely, both with the forward and the stepwise procedure, GDP per capita comes first and is followed by trust. The property rights index is the last variable to be included.

The main finding of this section is therefore that trust is a robust determinant of the size of the shadow economy. More precisely, it shows that a larger degree of trust is associated with a smaller shadow sector. The following section checks the robustness of this finding and probes deeper into the mechanisms that lie behind it.

4. Robustness checks

In this section, we put our finding through several robustness tests. We first substitute previous control variables by other indicators of taxation, regulation, the legal system, and corruption. Second, we consider a different dataset of the shadow economy. Third, we address the issue of endogeneity. Finally, we distinguish developed and developing countries.

4.1. Other control variables

The control variables included in previous regressions are all proxies for various variables that are usually assumed to affect the size of the shadow economy. One may therefore be concerned that the finding that trust negatively correlates with the size of the shadow economy was driven by the specific set of proxies used to measure taxation, the regulatory framework, the legal system, and corruption.

To address this concern, we therefore used a different proxy for each of these variables. Namely, we assess taxation by the Heritage Foundation's fiscal freedom index. We measure the quality of the regulatory framework by the World Bank's regulatory framework index computed by Kaufmann et al. (1999a). We replace the property rights index of previous section by the origin of the legal system, which is taken into account by a dummy variable that is set to one when the legal system is of French origin, since La Porta et al. (1998) have emphasized that creditors' rights are less protected in the French tradition. Finally, we substitute Transparency International's corruption perception index by the corruption index calculated by Kaufmann et al. (1999a) for the World Bank.

We then ran each regression anew with the new definition of each control variable. As before, we first included a single control variable then added GDP per capita. We finally estimated a model including all control variables before endogenously selecting the set of control variables. These regressions are displayed in table 3. They show a strikingly consistent pattern. Namely, trust always exhibits a negative sign and its order is remarkably stable across regressions. As before, the coefficient decreases when GDP per capita is

included. It remains close to one half when GDP per capita is not controlled for and to one third when GDP per capita is included. Our main finding is therefore robust to the definition of control variables.

*** Insert table 3 about here ***

4.2. Alternative estimates of the shadow economy

A second cause for concern was that the size of the shadow economy is not observed directly, and therefore has to be estimated. One may consequently worry about the sensitivity of our results to the specific estimate of the shadow economy we used. We therefore used the measure of the shadow economy used by Friedman et al. (2000) as an alternative to our previous estimate. Whereas Schneider's (2005a, 2005b, 2007) estimates are obtained with the DYMIMIC method, Friedman et al. (2000) collected data on the unofficial economy for 69 countries from three different sources.[6] Moreover, these estimates were not only obtained with a different method but are also available for a different period. Namely, they are available for the early nineties. They therefore allow to test the robustness of our findings not only to the estimate of the shadow economy, but also to the period of estimation.[7] We therefore also used older vintages of all explanatory variables. Friedman et al.'s (2000) measure of the shadow economy has however a drawback, since it is available for a smaller sample of countries than Schneider's (2005a, 2005b, 2007).

The results obtained with the alternative measure of the shadow economy are displayed in table 4. Although the sample size can shrink to 18 observations, the general picture displayed in that table is consistent with previous results. In other words, trust is still negatively correlated with the size of the shadow economy, with a different estimate of the shadow economy and on a different period of estimation. However, the sample size sometimes results in the coefficient of trust being (marginally) insignificant.

*** Insert table 4 about here ***

[6] Data for developed countries are calculated with the currency demand method for the years 1990–1993. Data for transition countries use Johnson et al.'s (1997) estimates for 1995, while data for Latin America employ MIMIC estimates for 1990-1993 from Loayza (1996). Data for Asia and Africa are from Lacko (1996) and are based on the electricity method.

4.3. Addressing endogeneity

A third remark is that trust may be partially endogenous to the size of the shadow economy, although the sign of the relationship may be ambiguous. Namely, it may be argued, as De Soto (1989) does, that increased trust arises from a greater probability of punishment for cheating in economic transactions thanks to the official legal system. A larger shadow economy should accordingly lead to less trust.

On the opposite, trust may arise as a substitute to the legal system when a lot of transactions take place underground. Agents who work in the informal sector may be forced to develop long-term relationships that enforce trust. In that case, a greater shadow economy may lead to more trust. Regardless of the sign of the relationship, the potential endogeneity of trust may bias our findings.

We therefore resorted to two-stage least-squares regressions to control for endogeneity. The instruments we used are the variables that Bjørnskov (2006, 2008) showed to be robustly related to trust. Namely, first-stage explanatory variables are ethno-linguistic fractionalisation and the shares of Catholics and Muslims in the population. The rationale for using ethno-linguistic fractionalisation is that ethnic diversity may reduce social cohesion, which is detrimental to trust, as Knack and Keefer (1997) argue. That the religious composition of the population matters is also a common finding of the literature on the determinants of trust. For instance, Bjørnskov (2006, 2008) or Zak and Knack (2001) find that Catholics and Muslims are less trusting. This may be due to the fact that hierarchical religions create vertical bonds of obligation in society, which divides people socially, as La Porta et al. (1997) argue following Putnam (1993). Other explanations are surveyed in Bjørnskov (2006).

*** Insert table 5 about here ***

Table 5 reports 2SLS estimates of the estimated relationship. To save on space, we only report the results for the bivariate regression, the parsimonious result that only controls for GDP per capita, the full model, and the endogenously determined model of previous section. The displayed results are both qualitatively and quantitatively similar to those

[7] Bjørnskov (2006) and Tabellini (2007) however show that trust is stable over time. Table A2 in the appendix confirms that the correlation of trust across the latest two vintages of the World Values Survey is very high and significant.

obtained with OLS estimates. Namely, they confirm that trust reduces the size of the shadow economy. Furthermore, once GDP per capita is controlled for, the coefficient is about the same order of magnitude as before. More to the point, as the first-stage independent variables are predetermined, it can be argued that the relationship is at least partly causal. The exogenous component of trust thus causes the size of the shadow economy.

4.4. Subgroups of countries

A final question pertains to the generality of our results. Since our sample pools developing and developed countries, the estimated relationship may be different from the actual relationship for the two sub-groups of countries. Gërxhani (2004a) indeed precisely stresses that this distinction is key to understanding the informal economy. We therefore split our sample in two sub-samples containing either only developing or developed countries, and estimated the relationship between trust and the shadow economy separately on those two sub-samples.

The result of this final robustness check is displayed in table 6. The first pair of columns displays OLS estimates of the full model. Those first two estimations suggest that the relationship observed so far was driven mainly by developing countries, since the coefficient of the trust index is insignificant in developed countries. As both sub-samples were small, we estimated the relationship again while only controlling for GDP per capita. The results remained very close to previous ones.

*** Insert table 6 about here ***

We then ran 2SLS regressions to control for a potential endogeneity bias. Starting from a parsimonious model, where only GDP per capita is controlled for, we again found that trust was significantly associated with a smaller shadow sector in developing countries, but that the relationship was insignificant in developed countries. We then turned to the full model. Unsurprisingly, trust remained insignificantly correlated with the size of the shadow economy in developed countries. Trust however also remained significantly and negatively correlated with the shadow economy in developing countries, in spite of a few observations being lost due to missing data. The relationship between trust and the size of the shadow economy therefore appears particularly robust in the sample of developing countries.

Those robustness checks suggest that the estimated negative impact of trust on the size of the shadow economy is both qualitatively and quantitatively robust. One may also remark that it is quantitatively significant. Our estimates imply that a one point increase in trust reduces the size of the shadow economy by one quarter to one third of a point of the size of the shadow economy measured as a share of official GDP. Since the standard deviation of the trust index is 14.95 and the standard deviation of the shadow economy is 13.34, this implies that a one standard deviation increase in trust results in a reduction of about one quarter to one half of the standard deviation of the shadow economy. Namely, increasing trust by 14.95 points reduces the shadow economy expressed as a share of official GDP by 4 to 6.5 points. This is not negligible since the mean of the shadow economy in our sample is 35.29.

In the sample of developing countries, the effect is larger, since the estimated coefficient amounts to two thirds of a point. In that sample of countries, the average size of the shadow economy is 39.39 percent, while its standard deviation is 11.01, and the standard deviation of the trust ratio is 13.12. Increasing trust by one standard deviation in that sample thus results in a reduction of four quarters of the standard deviation of the shadow economy.[8]

5. Is trust trust?

Up to now, we have measured generalized trust thanks to the standard measure of trust based on the question "Generally speaking, would you say that most people can be trusted or that you need to be very careful when dealing with people?". One may however be concerned about what this measure of trust actually measures, and about how survey respondents interpret it. It can be argued that it is too vague, and that responses could therefore reflect something else. It has in particular been argued that that measure of trust indeed measures trust in the quality of public institutions.

This section tackles those concerns. We therefore first use an alternative measure of generalized trust, which we use instead of the previous one. We then compare the impact of generalized trust on the shadow economy with that of explicit measures of trust in the government.

[8] One way to put it is that if Brazil could raise its trust ratio to the level of Croatia's, the size of its shadow economy would be similar to Lithuania's.

5.1. An alternative measure of generalized trust

To find an alternative measure of trust, we considered a different question of the World Values Survey. The latest wave of the survey incorporates the question: "Do you think most people would try to take advantage of you if they got a chance, or would they try to be fair? " Respondents could give two answers to that question: 1. "would try to take advantage", 2. "would try to be fair".

This question has for instance been used as an alternative to the usual trust question by Fehr et al. (2003). Although similar, it is more specific than the standard trust question. One may moreover contend that it addresses more explicitly how trust in others in general may affect transactions. For instance, the standard question can be interpreted as a question about the reliability of what other people say. On the contrary, the alternative question focuses on deeds as opposed to words. It consequently measures more specifically the dimension of trust that matters for transactions, especially in the informal sector. Its main drawback is to be available for 40 countries only.

In line with the standard definition of trust, we computed, for each country, the proportion of respondents answering to that question that people would be fair. The resulting variable, to which we refer as *fair*, ranges from 16.78, in Moldova, to 87.42, in Sweden. It is significantly correlated with the standard trust measure, as table A2 shows.

We ran all regressions anew with this alternative measure of generalized trust. The outcome of those regressions is displayed in table 7. To save on space, we only report regressions that control for GDP per capita.

*** Insert table 7 about here ***

The results strikingly confirm those obtained with the standard measure of trust. Namely, the alternative measure of trust is always significant and negatively correlated with the size of the shadow economy. This remains true regardless of the set of control variables, and of the method of estimation. Namely, the correlation remains significant and negative even when *fair* is instrumented. Moreover, the size of the estimated coefficient of *fair* is the same as in previous regressions. Our results are therefore both qualitatively and quantitatively robust to using a different measure of trust, even though using an alternative measure of generalized trust results in a somewhat smaller sample.

5.2. Trust in the government

To distinguish generalized trust from institutional quality, we have already controlled for two measures of corruption. One may however argue that the standard trust question also includes trust in the government, which may not be accurately captured by corruption indices. One may moreover contend that government officials' degree of corruption and trustworthiness are two separate things. Once a corrupt deal is struck, the corrupt official can still renege on his/her part of the deal. Some degree of trust is therefore still needed. This point is for instance made by Campos et al. (1999), who find that not only the level but also the predictability of corruption are statistically correlated with investment. To make sure that the relationship we observe is not driven by trust in the government, we must consequently control more precisely for this variable.

To do so, we used two questions of the latest vintage of the World Values Survey that specifically deal with trust in the government and civil servants. The first is precisely worded as "Do you trust the government?", and the second as "Do you trust the civil service?". For both questions, respondents were asked to reply on a scale from one to five, one standing for "completely", two for "a little", three for "neither", four for "not very much", and five for "not at all". To obtain one indicator for each country, we simply averaged the answers in that country. Finally, for readability sake, we rescaled that indicator, so that an increase reflects an increase in trust.

The resulting index of trust in the government ranges from 2.59, in Macedonia, to 4.74 in Viet Nam. The country with the lowest reported trust in the civil service is Argentina, whose score is 2.57, while the country with the largest trust in the civil service is Bangladesh, who scores 4.54. One may remark that the resulting indices are not significantly correlated with the index of generalized trust, as table A2 shows. This hints that they may measure something different. The correlation of trust in the government and trust in the civil service is however strongly significant. These two indices should therefore be viewed as complements of the measures of generalized trust, but substitutes to one another. We therefore tested both against the standard trust index, but used them in turn. The resulting estimations are displayed in table 8.

*** Insert 8 about here ***

Estimations 8.1 to 8.5 are devoted to trust in the government in general. They indicate that once GDP per capita is controlled for, trust in the government is significantly and negatively correlated with the size of the shadow economy.[9] More to the point, it appears that when generalized trust is included in the set of explanatory variables, both trust measures are significant. Furthermore, it appears that the size of the coefficient of generalized trust remains very similar to previous estimates. Accordingly, those estimations provide additional evidence that the standard trust measure indeed measures generalized trust, as opposed to trust in the government. We obtain the same result when generalized trust is instrumented. When both generalized trust and trust in the government are instrumented, the latter becomes insignificant, but generalized trust remains significantly and negatively correlated with the size of the shadow economy.

Estimations 8.6 to 8.10 draw a similar picture. Namely, once GDP per capita is controlled for, trust in the civil service is significantly and negatively correlated with the size of the shadow economy. The relationship is robust to controlling for generalized trust. Most of all, the coefficient of generalized trust is significantly negative, and its size does not differ from previous estimates. The only difference between trust in the civil service and trust in the government is that the former is insignificant in both IV regressions. However, the coefficient of generalized trust, which is the key variable of interest, is always negatively significant.

The general lesson of this section is therefore that the size of the shadow economy decreases when trust in the government, or trust in the civil service, increases. This is consistent with Feld and Frey's (2007) argument that tax payers voluntarily pay their taxes when they trust the state to use tax revenues fairly. Most of all the impact of trust in the government or in the civil service seems to be independent from the impact of generalized trust. Neither the sign nor the magnitude of the effect of generalized trust on the shadow economy seems to be affected when trust in the government is controlled for. This is additional evidence that the relationship our estimations unveil is a relationship between generalized trust and the shadow economy, and not simply a relationship with institutional quality.

[9] To save on space, we do not report estimations with more control variables, but the results are robust to the inclusion of the control variables used in previous sections. This is true for regressions run with both indicators of trust in the government. Those regressions are available upon request.

6. Concluding remarks

In this paper, we investigate the relationship between trust and the size of the shadow economy. Although that relationship is a priori ambiguous, our empirical results show that it is robustly negative. In other words, more trusting countries exhibit a smaller shadow sector. That result is robust to the estimation method, to the set of control variables, and to the estimate of the shadow sector. It is not driven by an endogeneity bias, nor by trust in the government or the civil service. The relationship seems to matter more for developing countries than developed ones. Quantitatively, one more point on the trust score is associated with a drop of the shadow economy as a share of the official economy that lies between a fourth and a third of a point. In the sample of developing countries, it can reach one half to two thirds of a point.

That result emphasizes the role of trust in determining economic outcomes by extending it to the informal sector. Most of all, it provides insights in the role that trust plays in that sector. Namely, if trust was mainly a substitute to the formal legal system, where it does not apply by definition, the opposite relationship should hold. Consequently, finding a negative relationship between trust and the size of the shadow economy suggests that the main impact of the former on the latter runs through agents' propensity to shy away from paying taxes.

The intrinsic difficulty of measuring the informal sector however calls for further research. Using datasets based on different methods, surveys or micro studies should therefore be seen as complement to cast some light on the part of economic activity that occurs in the shadow of official statistics.

Appendix

Appendix 1: List of countries in the sample:

Albania, Algeria, Argentina, Austria, Bangladesh, Belarus, Belgium, Bosnia, Bulgaria, Canada, Chile, China, Croatia, Czech Republic, Denmark, Egypt, Estonia, Finland, France, Germany, Greece, Hungary, India, Indonesia, Iran, Ireland, Israel, Italy, Japan, Jordan, Kyrgyzstan, Latvia, Lithuania, Macedonia, Mexico, Moldova, Morocco, Netherlands, Nigeria, Pakistan, Peru, Philippines, Poland, Portugal, Puerto Rico, Romania, Russia, Saudi Arabia, Serbia and Montenegro, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sweden, Tanzania, Turkey, Uganda, Uganda, Ukraine, United Kingdom, USA, Venezuela, Vietnam.

Appendix 2: Descriptive statistics and correlation of trust measures

*** Insert table A1 about here ***

*** Insert table A2 about here ***

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Table 1: Dependent variable: Shadow economy 2002-2003 (Schneider, 2007), OLS estimates

	(1.1)	(1.2)	(1.3)	(1.4)	(1.5)	(1.6)	(1.7)	(1.8)	(1.9)	(1.10)
Const.	43.35	109.09	33.70	103.66	56.18	100.10	53.88	92.59	51.71	94.36
	(14.96)	(9.89)	(6.89)	(7.97)	(15.51)	(7.73)	(17.80)	(6.66)	(16.35)	(5.50)
	***	***	***	***	***	***	***	***	***	***
Trust	–0.473	–0.283	–0.442	–0.304	–0.409	–0.297	–0.325	–0.271	–0.219	–0.232
	(5.18)	(3.58)	(4.65)	(3.82)	(5.13)	(3.70)	(4.11)	(3.49)	(2.13)	(2.36)
	***	***	***	***	***	***	***	***	**	**
Log (per capita GDP)		–7.83		–7.53		–6.19		–5.26		–5.67
		(6.13)		(5.63)		(3.52)		(2.85)		(2.52)
		***		***		***		***		**
Taxation			1.558	0.529						
(Marginal tax rate, FI)			(2.34)	(0.94)						
			**							
Regulation					–0.337	–0.128				
(Business freedom, HF)					(4.95)	(1.49)				
					***					
Legal system							–0.281	–0.138		
(Property rights, HF)							(5.73)	(2.02)		
							***	**		
Corruption									–3.258	–1.33
(CPI)									(5.26)	(1.37)
									***	
N	65	63	56	56	63	62	63	62	57	57
F	26.83	39.20	16.29	27.74	30.37	27.38	36.34	28.85	29.75	23.92
R^2	0.2987	0.5664	0.3807	0.6155	0.5031	0.5862	0.5478	0.5987	0.5242	0.5752
Adj. R^2	0.2875	0.5520	0.3574	0.5933	0.4865	0.5648	0.5327	0.5780	0.5066	0.5512

Absolute *t*-statistics are displayed in parentheses under the coefficient estimates. *: test-statistic is significant at the 10% level; **: significant at the 5% level; ***: significant at the 1% level.

Table 2: Dependent variable: Shadow economy 2002-2003 (Schneider, 2007), OLS estimates

	(2.1)	(2.2)
Const.	86.93	92.59
	(4.91)	(6.66)
	***	***
Trust	–0.271	–0.271
	(2.80)	(3.49)
	***	***
Log (per capita GDP)	–5.05	–5.26
	(2.26)	(2.85)
	**	***
Taxation	0.754	
(Marginal tax rate, FI)	(1.24)	
Regulation	–0.0031	
(Business freedom, HF)	(0.03)	
Legal system	–0.1985	–0.138
(Property rights, HF)	(1.68)	(2.02)
	*	**
Corruption	0.6879	
(CPI)	(0.48)	
N	54	62
F	13.98	28.85
R^2	0.6408	0.5987
Adj. R^2	0.5950	0.5780

Absolute *t*-statistics are displayed in parentheses under the coefficient estimates. *: test-statistic is significant at the 10% level; **: significant at the 5% level; ***: significant at the 1% level.

Table 3: Dependent variable: Shadow economy 2002-2003 (Schneider, 2007), OLS estimates

	(3.1)	(3.2)	(3.3)	(3.4)	(3.5)	(3.6)	(3.7)	(3.8)	(3.9)	(3.10)
Const.	1.71	92.68	43.95	77.63	43.88	109.19	39.70	64.49	64.36	39.70
	(0.12)	(4.35)	(19.58)	(4.75)	(14.06)	(9.83)	(18.01)	(3.65)	(2.74)	(18.01)
		***	***	***	***	***	***	***	***	***
Trust	–0.336	–0.251	–0.383	–0.320	–0.474	–0.285	–0.268	–0.256	–0.257	–0.268
	(3.43)	(2.98)	(5.32)	(4.14)	(5.15)	(3.57)	(3.66)	(3.43)	(2.84)	(3.66)
	***	***	***	***	***	***	***	***	***	***
Log(per capita GDP)		–7.37		–4.04		–7.80		–2.83	–2.83	
		(5.12)		(2.09)		(6.06)		(1.41)	(1.34)	
		***		**		***				
Taxation	0.474	0.142							0.009	
(Fiscal freedom, HF)	(3.02)	(0.96)							(0.06)	
	***									
Regulation			–7.61	–4.61					–0.43	
(Regulatory framework,			(6.58)	(2.52)					(0.13)	
WB)			***	**						
Legal system					–1.87	–0.901			–1.75	
(French origin)					(0.63)	(0.38)			(0.71)	
Corruption							–7.36	–5.38	–5.06	–7.36
(Control of corruption, WB)							(7.27)	(3.10)	(1.56)	(7.27)
							***	***		***
N	63	62	65	63	64	63	65	63	62	65
F	19.39	26.39	44.04	30.58	13.33	25.81	50.88	33.10	15.88	50.88
R^2	0.3925	0.5771	0.5869	0.6086	0.3042	0.5675	0.6214	0.6273	0.6340	0.6214
Adj. R^2	0.3723	0.5553	0.5735	0.5887	0.2814	0.5455	0.6092	0.6084	0.5941	0.6092

Absolute *t*-statistics are displayed in parentheses under the coefficient estimates. *: test-statistic is significant at the 10% level ; **: significant at the 5% level ; ***: significant at the 1% level.

Table 4: Dependent variable: Shadow economy 1993-1995 (Friedman et al., 2000), OLS estimates

	(4.1)	(4.2)	(4.3)	(4.4)	(4.5)	(4.6)	(4.7)	(4.8)	(4.9)	(4.10)
Const.	47.68	197.51	32.00	190.99	65.55	156.44	60.19	177.85	47.20	151.31
	(8.62)	(6.32)	(3.05)	(6.67)	(8.33)	(4.13)	(6.18)	(4.48)	(11.56)	(4.41)
	***	***	***	***	***	***	***	***	***	***
Trust	–0.783	–0.021	–0.604	0.227	–0.599	–0.163	–0.501	–0.041	–0.238	–0.025
	(4.03)	(0.10)	(2.95)	(1.16)	(2.80)	(0.61)	(1.78)	(0.14)	(1.57)	(0.18)
	***		***		***		*			
Log(per capita GDP)		–18.74		–20.24		–12.18		–15.81		–12.59
		(4.87)		(5.71)		(2.43)		(2.99)		(3.05)
		***		***		**		***		***
Taxation			1.59	2.52						
(Marginal tax rate, FI)			(1.31)	(3.18)						
				***						
Regulation					–0.44	–0.274				
(Business freedom, HF)					(3.40)	(1.98)				
					***	*				
Legal system							–0.332	–0.102		
(Property rights, HF)							(1.86)	(0.57)		
							*			
Corruption									–3.11	–1.71
(CPI)									(3.10)	(1.84)
									***	*
N	36	34	25	25	28	27	28	27	18	18
F	16.28	25.71	9.09	25.63	13.07	12.45	7.41	9.76	25.12	29.13
R^2	0.3237	0.6239	0.4524	0.7855	0.5112	0.6189	0.3722	0.5600	0.7701	0.8619
Adj. R^2	0.3039	0.5996	0.4026	0.7549	0.4721	0.5692	0.3220	0.5026	0.7395	0.8323

Absolute *t*-statistics are displayed in parentheses under the coefficient estimates. *: test-statistic is significant at the 10% level ; **: significant at the 5% level ; ***: significant at the 1% level.

Table 5: Dependent variable: Shadow economy 2002-2003

(Schneider, 2007), 2SLS estimates

	(5.1)	(5.2)	(5.3)	(5.4)
Const.	51.42	105.52	112.66	105.38
	(8.46)	(10.52)	(6.06)	(7.48)
	***	***	***	***
Trust	–0.818	–0.416	–0.433	–0.404
	(4.01)	(2.57)	(2.24)	(2.49)
	***	**	**	**
Log(per capita GDP)		–7.21	–7.96	–7.17
		(4.98)	(2.34)	(3.62)
		***	***	***
Taxation			–0.011	
(Marginal tax rate, FI)			(0.02)	
Regulation			–0.039	
(Business freedom, HF)			(0.29)	
Legal system			–0.103	–0.011
(Property rights, HF)			(0.81)	(0.14)
Corruption			1.555	
(CPI)			(0.89)	
N	48	48	45	47
F	16.11	46.60	13.87	31.64
R^2	0.236	0.684	0.691	0.694
Adj. R^2	0.219	0.670	0.642	0.672
Sargan test (P-value)	0.016	0.881	0.801	0.800

Absolute *t*-statistics are displayed in parentheses under the coefficient estimates. *: test-statistic is significant at the 10% level; **: significant at the 5% level; ***: significant at the 1% level.

Table 6: Developing vs. Developed countries

Dependent variable: Shadow economy 2002-2003 (Schneider, 2007)

	(6.1) Developing OLS	(6.2) Developed OLS	(6.3) Developing OLS	(6.4) Developed OLS	(6.5) Developing 2SLS	(6.6) Developed 2SLS	(6.7) Developing 2SLS	(6.8) Developed 2SLS
Const.	60.09	255.45	89.72	285.51	107.89	247.43	85.20	231.48
	(3.21)	(3.54)	(5.48)	(5.54)	(6.81)	(4.67)	(4.21)	(2.48)
	***	***	***	***	***	***	***	**
Trust	–0.557	0.015	–0.372	0.015	–0.664	–0.0316	–0.52	–0.125
	(4.48)	(0.19)	(3.35)	(0.24)	(2.98)	(0.40)	(2.45)	(0.93)
	***		***		***		**	
Log(per capita GDP)	–2.63	–23.19	–5.24	–26.57	–6.81	–22.66	–5.8	–20.69
	(1.10)	(2.95)	(2.73)	(5.11)	(3.66)	(4.22)	(2.04)	(2.00)
		**	***	***	***	***	*	**
Taxation	3.06	–0.81					2.39	–1.139
(Marginal tax rate, FI)	(3.74)	(1.89)					(2.50)	(1.70)
	***	*					**	
Regulation	–0.07	0.14					–0.0636	0.107
(Business freedom, HF)	(0.41)	(1.88)					(0.35)	(1.14)
		*						
Legal system	–0.31	0.02					–0.227	0.0242
(Property rights, HF)	(2.28)	(0.17)					(1.53)	(0.12)
	**							
Corruption	2.91	–1.48					2.69	–0.534
(CPI)	(1.36)	(1.32)					(1.12)	(0.35)
N	34	20	43	20	29	19	26	19
F	8.08	7.57	11.21	14.43	13.08	13.11	5.50	4.32
R^2	0.642	0.777	0.3591	0.6448	0.568	0.612	0.713	0.649
Adj. R^2	0.563	0.675	0.3271	0.6030	0.535	0.563	0.623	0.473
Sargan (P-value)					0.712	0.314	0.629	0.338

Absolute *t*-statistics are displayed in parentheses under the coefficient estimates. *: test–statistic is significant at the 10% level; **: significant at the 5% level; ***: significant at the 1% level.

Table 7: Alternative measure of generalized trust. Dependent variable: Shadow economy 2002-2003 (Schneider, 2007)

	(7.1) OLS	(7.2) OLS	(7.3) OLS	(7.4) OLS	(7.5) OLS	(7.6) OLS	(7.7) OLS	(7.8) 2SLS	(7.9) 2SLS
Const.	50.87	122.04	125.37	127.74	120.76	127.69	130.89	70.57	121.86
	(3.58)	(9.11)	(7.57)	(16.57)	(6.94)	(5.19)	(4.64)	(4.71)	(7.60)
	***	***	***	***	***	***	***	***	***
Fair	–0.420	–0.26	–0.244	–0.239	–0.253	–0.237	–0.215	–0.876	–0.484
	(11.74)	(2.82)	(2.24)	(2.45)	(2.66)	(2.22)	(1.61)	(2.59)	(1.80)
	***	***	**	**	**	**		**	*
Log(per capita GDP)		–9.06	–9.47	–10.02	–8.77	–9.91	–10.77		–7.88
		(5.59)	(5.04)	(4.10)	(3.57)	(2.87)	(2.55)		(3.50)
		***	***	***	***	***	**		***
Taxation			–0.125				0.193		
(Marginal tax rate, FI)			(0.14)				(0.16)		
Regulation				0.037			–.0466		
(Business freedom, HF)				(0.29)			(0.19)		
Legal system					–0.04		2.74		
(Property rights, HF)					(3.57)		(0.60)		
					***				
Corruption						0.179	0.841		
(CPI)						(0.12)	(0.39)		
N	39	37	31	36	36	31	29	32	32
F	12.79	27.44	13.98	18.22	18.30	14.56	5.77	6.72	17.16
R^2	0.257	0.617	0.608	0.631	0.632	0.618	0.611	-0.093	0.5174
Adj. R^2	0.237	0.595	0.565	0.596	0.597	0.576	0.505	-0.129	0.484
Sargan test (P-value)								0.092	0.165

Absolute *t*-statistics are displayed in parentheses under the coefficient estimates. *: test–statistic is significant at the 10% level; **: significant at the 5% level; ***: significant at the 1% level.

Table 8: Trust in the government. Dependent variable: Shadow economy 2002-2003 (Schneider, 2007)

	(8.1) OLS	(8.2) OLS	(8.3) OLS	(8.4) 2SLS[a]	(8.5) 2SLS[b]	(8.6) OLS	(8.7) OLS	(8.8) OLS	(8.9) 2SLS[a]	(8.10) 2SLS[b]
Const.	40.29	204.16	161.19	166.49	152.87	30.5	177.81	150.62	137.32	74.13
	(2.23)	(8.29)	(7.73)	(27.67)	(2.39)	(1.81)	(8.53)	(7.22)	(5.75)	(0.67)
	**	***	***	***	**	*	***	***	***	
Trust in the government	–1.74	–14.48	–8.81	–9.96	–7.74					
	(0.35)	(3.98)	(2.89)	(2.46)	(0.76)					
		***	***	**						
Trust in civil servants						0.145	–12	–8.84	–6.27	5.95
						(0.03)	(3.26)	(2.47)	(1.63)	(0.28)
							***	**		
Trust			–0.364	–0.598	–0.63			–0.229	–0.318	–0.417
			(3.98)	(3.06)	(2.50)			(2.77)	(2.12)	(1.72)
			***	***	**			***	**	*
Log(per capita GDP)		–13.89	–10.21	–9.60	–8.84		–11.74	–9.246		–5.98
		(7.64)	(6.40)	(4.51)	(2.28)		(8.59)	(6.35)		(1.21)
		***	***	***	**		***	***		
N	36	34	33	29	29	64	62	61	46	46
F	0.12	29.23	34.93	30.12	24.76	0.00	36.95	29.45	36.46	24.73
R^2	0.0035	0.654	0.783	0.79	0.777	0.00	0.556	0.608	0.73	0.633
Adj. R^2	–0.026	0.631	0.761	0.764	0.75	–0.016	0.541	0.587	0.7111	0.607
Sargan test (P-value)				0.954	0.881				0.545	0.514

[a]: Only generalized trust is endogenized. [b]: Both generalized trust and the other measure of trust are endogenized.

Absolute *t*-statistics are displayed in parentheses under the coefficient estimates. *: test-statistic is significant at the 10% level; **: significant at the 5% level; ***: significant at the 1% level.

Table A1: Summary statistics

	Mean	Std. deviation	Minimum	Maximum
Shadow economy (Schneider, 2007)	35.29	13.34	8.4	68.30
Shadow economy (Friedman et al, 2000)	28.24	18.36	5.8	76.0
Trust 1999-2004	28.33	14.95	7.6	66.5
Trust 1994-1999	24.81	13.08	2.8	64.8
Fair	43.35	16.98	16.78	87.42
Trust in the government	3.54	0.47	2.59	4.74
Trust in civil servants	3.40	0.34	2.57	4.54
Log(PIB per capita 2003)	8.58	1.20	5.84	10.80
Log(PIB per capita 1993)	8.39	1.16	5.39	10.48
Marginal tax rate 2003	5.77	2.5	0	10
Marginal tax rate 1994	5.43	2.52	0	10
Fiscal freedom 2003	80.77	11.81	0	100
Business freedom 2003	41.1	17.82	10	90
Business freedom 1994	48.04	20.0	10	90
Property rights 2003	48.06	23.99	10	90
Property rights 1994	56.47	20.52	10	90
Regulatory framework 2003	–0.0002	0.998	–2.35	1.94
Corruption perception index 2003	4.53	2.37	1.2	9.7
Corruption perception index 1994	5.93	2.55	1.94	9.55
Control of corruption 2003	–0.004	0.999	–1.72	2.51

Table A2: Correlation of measures of trust

	Trust 1999-2004	Trust 1994-1999	Fair	Trust in the government	Trust in civil servants
Trust 1999-2004	1	0.847 ***	0.693 ***	0.158	0.143
Trust 1994-1999		1	0.584 ***	0.316	0.158
Fair			1	0.316 *	0.2517
Trust in the government				1	0.757 ***
Trust in civil servants					1