

SHADOW ECONOMY, INSTITUTIONS, AND TAX MORALE

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INTRODUCTION

IN THE LAST TWO DECADES THE NUMBER OF studies that have investigated the underground economy have strongly increased. However, knowing the unknown and therefore estimating the shadow economy activities is a difficult task. Unfortunately, it is very difficult to get accurate information about shadow economy activities on the goods and labor market, because all individuals engaged in these activities do not wish to be identified. Hence, the estimation of the shadow economy activities can be considered as a scientific passion for knowing the unknown. However, in more recent years, economists went beyond ignoring the topic as the interest in this phenomenon has strongly increased. The generation of statistics is insofar important as it allows making effective and efficient resource allocation decisions. A similar tendency is observable in other areas that investigate illegal activities (Schneider and Enste, 2002). Similar to the 1980s, the studies on corruption were largely confined to other fields such as political science and sociology. Studies in economics have strongly increased since the early 1990s. In general, the transformation of the socialist economies was one of the main reasons for this surge in interest because institutional weaknesses and corruption surfaced as major obstacles to market reforms (Abed and Gupta, 2002). Moreover, the increased interest and new data sets contributed to a rapidly growing empirical literature on illegal activities such as shadow economy or corruption (see Schneider and Enste, 2000, 2002; Treisman, 2000; and Lamsdorf, 1999 for reviews).

This paper investigates the relationship between the shadow economy, tax morale, and institutional quality. Although there are more and more studies that investigate the causes of shadow economic activities, societies often attempt to control these activities through measures such as punishment, prosecution, economic growth, or education (Schneider and Enste 2002). However, there are further instruments that merit more attention. It is highly relevant to investigate not only the importance of objective variables such as tax burden, rate of public expenditure, or the density of regulation,

but also the subjective perceptions, expectations, attitudes, and motivations such as tax morale or the (perceived) institutional quality. In general, the better the societal institutions, other things equal, the lower we would expect the shadow economy to be. An important contribution of this paper is thus to extend the previous models by establishing the extent to which *informal and formal institutions* matter.

THEORETICAL CONSIDERATIONS

Tax Morale

The tax compliance literature has shown the relevance to go beyond a neoclassic approach when trying to understand why citizens pay taxes. Allingham and Sandmo's (1972) groundbreaking model, which assumes that the extent of tax evasion is negatively correlated with the probability of detection and degree of punishment, has been widely criticized. A main point, which is connected to the empirical and experimental findings, is that these deterrence models predict far too little compliance and far too much tax evasion (for an overview, see Alm, 1999; Torgler, 2002). That is, in many countries, the level of deterrence is too low to explain the high degree of tax compliance. To resolve this puzzle of tax compliance, many researchers have argued that tax morale can help explain the high degree of tax compliance (for an overview, see Torgler, 2007). Bird et al. (2006) argue that a sustainable tax system is based on a fair tax system and responsive government, achieved with a strong connection between tax payments and the supply of public goods. If taxpayers perceive that their preferences are adequately represented and they are supplied with public goods, their identification with the state increases, and thus the willingness to pay taxes rises. Thus, we can develop the following hypothesis:

Core Hypothesis 1: *A higher degree of tax morale, defined as the intrinsic motivation to pay taxes, reduces, ceteris paribus, the size of the shadow economy in a country.*

It is a relevant issue to investigate whether differences in tax morale across countries are reflected in any differences in real, or observed, behaviors in these countries. Thus, we expect that tax morale has such real effects on the size of the shadow economy. Moreover, Alm, Martinez-Vazquez, and Schneider (2004) argue that the size of the underground economy can serve as a useful, if somewhat imperfect, measure of the extent of tax evasion, so that a negative correlation between the size of the shadow economy and tax morale indicates the extent to which individuals' revealed actions are related to their attitudes about paying taxes.

Previous studies give information about the raw and not the partial effects (Torgler, 2005; Alm and Torgler, 2006; Alm, Martinez-Vazquez, and Torgler, 2006). The observed correlation might be explained in terms of factors that affect the size of shadow economy. It is important to investigate the causes as a whole with their interdependencies. An investigation that focuses on a simple correlation has a somewhat limited validity. Thus, multiple regressions help us to disentangle the effects of other factors from a possible tax morale effect.

Institutional Quality

Not only the economic, but also the political system affects formal and informal economic activities. Bird et al. (2006) stress that if poor countries want to become richer, they need to spend more on public infrastructure, education, and so on. Therefore, they need to tax more. But a key reason why they do not do so also seems obvious: "it is not in the interest of those who dominate the political institutions of such countries to increase taxes. If this is the story, then economists, who do not readily take to the revolutionary barricades, have a problem in suggesting a viable solution" (p. 284). The outcome in many countries is explainable as the underlying political conditions in these countries have not, for the most part, changed significantly over this period: "Countries may tend to achieve an equilibrium position with respect to the size and nature of their fiscal systems that largely reflects the balance of political forces and institutions, and stay at this position until 'shocked' to a new equilibrium" (p. 289).

We can expect that corruption and insecurity of property rights have an impact on the size of shadow economy. If the government and the

administration have a great discretionary power over the allocation of resources as it is the case in many former centrally planned economies, corruption is enhanced. Agents as the political elite, administration staff, and legislators have a discretionary power if institutions are neither credible nor working well. Levin and Satarov (2000), for example, analyze corruption and institutions in Russia. They criticize that corruption is an integral part of Russia's economy. Corruption has the negative consequence that citizens reduce their trust in the authority. Levin and Satarov state that the degree of corruption exceeds the total expenditures on science, education, health care, culture, and art. In some industrial branches criminal groups spend up to 50 percent of their revenues to bribe officials (p. 115). In countries where corruption is systemic and the government budget lacks transparency the obligation of paying taxes cannot be assumed to be an accepted social norm. Institutional instability, lack of transparency, and rule of law undermine the willingness of frustrated citizens to be active in the formal economy. Furthermore, there might be a crowding-out effect of morality among the tax administrators when there are a great number of corrupt colleagues. Citizens will feel cheated if they believe that corruption is widespread, their tax burden is not spent well, and that they are not protected by the rules of law. This increases the incentive to enter the informal sector. Corrupt bureaucracy will not assign the services to the most efficient producers, but to the producer who offers the larger bribes. Thus, corruption reduces the efficiency of allocation and produces delays in transactions to acquire additional payments (see, e.g., Rose-Ackerman, 1997; Jain, 2001). Such tendencies might have a strong impact on the size of the shadow economy.

If citizens perceive that their interests (preferences) are properly represented in political institutions, their willingness to act in the underground economy decreases. On the other hand, in an inefficient state where corruption is rampant the citizens will have little trust in authority and thus a low incentive to cooperate. A more encompassing and legitimate state may be an essential precondition for a more adequate tax system. Thus our second core hypothesis reads:

Core Hypothesis 2: *A lower level of institutional quality increases the size of shadow economies, ceteris paribus.*

Friedman et al. (2000) show empirically that countries with more corruption have a higher share of unofficial economy. We additionally investigate tax morale, a factor that Friedman et al. (2000) and other studies have disregarded. Moreover, we analyze the impact of institutional quality with a high number of variables. Dreher and Schneider (2006) have also investigated the correlation between shadow economy and corruption. They observe the tendency that shadow economy and corruption are substitutes in high-income countries, but complements in low-income countries.

EMPIRICAL EVIDENCE

The shadow economy includes all market-based legal production of goods and services that are deliberately concealed from public authorities for the following reasons (Schneider 2005):

1. to avoid payment of income, value added or other taxes,
2. to avoid payment of social security contributions,
3. to avoid having to meet certain legal labor market standards, such as minimum wages, maximum working hours, safety standards, etc., and
4. to avoid complying with certain administrative procedures, such as completing statistical questionnaires or other administrative forms.

Hence, in this paper, we will not deal with typical underground economic activities, which are all illegal actions with the characteristics of classical crimes like burglary, robbery, drug dealing, etc. We also do not include the informal household economy which consists of all household services and production. To measure the shadow economy as a percentage of the official GDP we will use the DYMIMIC-method to estimate the parameters for determining the size of the shadow economy and with the help of the Currency Demand Method to calibrate the estimated coefficients of the DYMIMIC procedure into absolute ones. We build average values for 1990, 1995, and 1999. The fundament of the database has been elaborated in previous studies and is therefore not further discussed in this paper (see Schneider 2005, 2006).

We define tax morale, a key variable, as the intrinsic motivation to pay taxes. It measures an individual's willingness to pay taxes, in other words, the moral obligation to pay taxes or the belief that paying taxes contributes to society. Data for the tax morale variable are extracted from several surveys: the Latinobarómetro (1998), the World Values Survey (WVS) 1990-1993, 1995-1997 (see Inglehart et al., 2000) and the European Values Survey (1999/2000). Both surveys investigate socio-cultural and political change and collect comparative data on values and belief systems. Both are based on representative national samples of at least 1000 individuals. The World Values Survey (WVS) is worldwide and covers a huge number of countries, while the Latinobarómetro survey is carried out in 17 Latin American countries. The general questions to assess the level of tax morale in the two surveys are:

1. *World Values Survey/European Values Survey:*
"Please tell me for each of the following statements whether you think it can always be justified, never be justified, or something in between: (...) Cheating on tax if you have the chance (% "never justified" – code 1 from a ten-point scale where 1=never and 10=always)."
2. *Latinobarómetro:*
On a scale of 1 to 10, where 1 means not at all justifiable and 10 means totally justifiable, how justifiable do you believe it is to: Manage to avoid paying all your tax.

In both cases the tax morale variable is developed by recoding the ten-point scale into a four-point scale (0 to 3), with the value 3 standing for "never justifiable." The value of 0 is an aggregation of the last 7 scale points, which were rarely chosen. Both surveys cover together the period 1990 to 1999. Despite these possible objections, our approach to measuring tax morale is consistent with the previous studies in this area (for an overview see Torgler, 2007).

Several data sources are used to measure institutional quality. First, the Quality of Governance Index has been used (see Kaufmann, Kraay, and Mastruzzi, 2003). Our index values report the mean value of six governance dimensions for the periods 1996, 1998, and 2000 (first three rounds). It is based on several hundred variables measuring percep-

Table 1
Descriptive Statistics and a Summary of the Results

<i>Variables</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min</i>	<i>Max</i>	<i>Source</i>	<i>Results</i>
DEPENDENT VARIABLE						
SHADOW ECONOMY	29.413	12.944	7.670	62.500	Schneider (2005)	
INDEPENDENT VARIABLES						
TAX MORALE	2.103	0.355	1.370	3.014	WVS/Latinobarómetro	-
INDEX GOVERNANCE	0.125	0.833	-1.970	1.870	Kaufmann et al. (2003)	-
VOICE AND ACCOUNT.	0.092	0.941	-1.890	1.610	Kaufmann et al. (2003)	-
POLITICAL STABILITY	0.080	0.924	-2.390	1.650	Kaufmann et al. (2003)	-
GOVERNMENT EFFECTIV.	0.135	0.904	-1.830	2.370	Kaufmann et al. (2003)	-
REGULATORY QUALITY	0.172	0.801	-2.590	1.950	Kaufmann et al. (2003)	-
RULE OF LAW	0.153	0.938	-1.830	2.210	Kaufmann et al. (2003)	-
CONTROL OF CORRUP. (KAUFMANN ET AL.)	0.130	0.955	-1.610	2.390	Kaufmann et al. (2003)	-
CORRUPTION (TI)	4.603	2.320	1.600	10.000	Transparency International	-
CORRUPTION (ICRG)	3.565	1.204	0.338	6.000	ICRG	-
LEGAL SYSTEM AND PROPERTY RIGHTS	5.914	1.720	2.200	9.300	The Fraser Institute	-
JUDICIARY INDEPENDENCE	6.689	2.056	2.300	9.800	The Fraser Institute	-
IMPARTIAL COURTS	5.739	1.733	1.800	9.500	The Fraser Institute	-
PROTECTION OF INTELLECT. PROPERTY RIGHTS	5.581	1.666	1.200	8.400	The Fraser Institute	-
GOV. INTERVENTIONS	3.202	0.814	1.700	5.000	Heritage	+
FISCAL BURDEN	3.693	0.613	1.750	4.960	Heritage	(-)
WAGE PRICES	2.716	0.761	1.000	4.750	Heritage	(-)
LOG (GDP PER CAPITA)	8.470	1.021	6.209	10.224	World Development Indicators	(-)
AGRICULTURE/GDP	17.123	13.843	0.210	59.970	World Development Indicators	(+)
UNEMPLOYMENT	9.308	6.170	0.720	39.300	World Development Indicators	(+)
URBAN	53.782	23.982	5.660	100.000	World Development Indicators	(+)

Notes: - Reduction of the shadow economy, robust and statistically significant. + Increase of the shadow economy, robust and statistically significant. (+) and (-) not robust and therefore not, or not in a consistent manner, statistically significant.

tions of governance and derived from 25 different data sources. Kaufmann et al. (2003) classify the six governance indicators into three groups:

1. Process by which governments are selected, monitored, and replaced,
2. Capacity of the government effectively to formulate and implement sound policies,
3. Respect of citizens and the state for the institutions that govern economic and social interactions.

All scores estimated by Kaufmann et al. (2003) lie between -2.5 and 2.5 , with higher scores corresponding to better institutions (outcomes). We check the robustness of the statistical results for the governance index by using also all single subindexes independently.

In a next step we consider additional variables that measure a person's protection and their rightfully acquired property. Thus, we investigate the following variables provided by The Fraser Institute in its Economic Freedom of the World Data (year 1995, see Gwartney et al. 2006): (1) LEGAL SYSTEM AND PROPERTY RIGHTS, (2) JUDICIARY INDEPENDENCE, (3) IMPARTIAL COURTS, and (4) PROTECTION OF INTELLECTUAL PROPERTY RIGHTS. The scales go from 1 to 10, with higher scores for countries with better institutions.

Table 1 shows a summary of the empirical results done by Torgler and Schneider (2007). The models are estimated using cross-section data with mean values for the years 1990 to 1999. In order to fulfill the *ceteris paribus* conditions, several control variables have been used (government intervention, fiscal burden, government regulation, richness of a country, sectoral composition of a country, unemployment, and regional dummy variables). Table 1 presents the overview of the results which strongly suggest that tax morale plays a significant role in the determination of the level of shadow economy. A higher tax morale leads to a smaller shadow economy. Table 1 also shows that the institutional quality determinants are highly relevant for explaining the size of shadow economy. A higher level of institutional quality is correlated with a smaller shadow economy. The strongest impact can be found for the variable GOVERNMENT EFFECTIVENESS, followed by VOICE AND ACCOUNTABILITY, and POLITICAL

STABILITY. Thus, we can conclude that our two core hypotheses 1 and 2 cannot be rejected. Table 1 also indicates that GOVERNMENT INTERVENTIONS have a positive impact on the size of shadow economy. Table 1 provides the results of additional institutional variables. As can be seen, all the coefficients are highly statistically significant with high beta coefficients indicating that these proxies for institutional quality are central elements to understanding the size of the shadow economy. Torgler and Schneider (2007) also investigate the causality direction and find that the results remain robust. In sum, the empirical results suggest that our two main hypotheses cannot be rejected. Tax morale and institutional quality play a significant role in the determination of the size of the shadow economy.

CONCLUSIONS

The paper shows that improving social institutions, e.g., by enhancing tax morale, voice and accountability, the rule of law, government effectiveness and its regulatory quality, and by reducing corruption help lessen a possible incentive to go underground. Moreover, the legal structure and security of property rights are important factors that influence the size of the shadow economy. The most important contribution of this paper has been to extend the previous empirical model of the shadow economy by showing that tax morale and societal institutions in general matter quite significantly in the determination of the size of the shadow economy.

As mentioned, the relevance of tax morale has not been investigated in previous studies such as Friedman et al. (2000). It is important to consider the moral dimension of complying with societies' rules. Social norms or social capital are key factors to understand why people comply. Moreover, social capital seems to be an important determinant of economic phenomena like macroeconomic performance. For example, Knack and Keefer (1997), in a cross-sectional analysis, find a strong and significantly positive relationship between social capital variables (civic duty) and economic growth. Schaltegger and Torgler (2007), using data for a synthetic panel of Swiss cantons over the 1981–2001 period, show that accountability enhances fiscal performance. As Slemrod (1998) argues that social capital – measured as the willingness to pay taxes voluntarily – lowers the cost of

government operations and of equitably assigning such cost to citizens.

Such research justifies a closer look at social capital and societal institutions. A high level of institutional quality allows one's own preferences to be expressed, and involvement and participation in the political process enhances identification with a state's institutions; this counteracts the inclination to be active in the shadow economy. Participation and identification reduce therefore free-rider problems. If citizens and authorities interact with a sense of collective responsibility thanks to the institutional structures, the system may be better governed and the policies more effective, as accountability promotes effectiveness through its impact on government behavior (Schaltegger and Torgler, 2007). On the other hand, if citizens feel cheated, if they believe that corruption is widespread, their tax burden is not spent well and that they are not well protected by the rules of law, the incentive for them to get involved in the informal sector grows. The institutional architecture seems to be a key component in the understanding of the shadow economy. A more encompassing and legitimate state with a well-functioning law system is an essential precondition for a lower level of the shadow economy.

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