Institutions, Paradigms, and Tax Evasion in Developing and Transition Countries

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INTRODUCTION

Although it is commonly said that the only things certain in life are death and taxes, it is unmistakable that taxes are in fact far from inevitable. Individuals do not like paying taxes, they take a variety of actions to reduce their tax liabilities, and in many occasions they get away with it. Some of these actions can be classified as tax avoidance, or the legal reduction in tax liabilities by practices that take full advantage of the tax code, such as income splitting, postponement of taxes, and tax arbitrage across income sources that face different treatment. Tax evasion consists of illegal and intentional actions taken by individuals and firms to reduce their legally due tax obligations, by underreporting incomes, sales or wealth, by overstating deductions, exemptions or credits, or by failing to file appropriate tax returns. For its part, government must take actions to increase compliance with the tax laws.

Tax evasion is notoriously difficult to measure.\(^1\) Still, there is widespread evidence that tax evasion is extensive and commonplace in nearly all countries. For the United States, the most reliable estimates suggest that the amount of unpaid federal individual and corporate income taxes totaled $127 billion for 1992, with an annual growth rate of 10 percent since 1973 (Internal Revenue Service, 1996). Evidence from a variety of methods for other and diverse countries, such as Argentina (Herschel, 1978), the Philippines (Manasan, 1988), Jamaica (Alm, Bahl and Murray, 1990; 1993), the Netherlands (Elffers, 1991), and Spain (de Juan et al., 1994), indicate that tax evasion is a pervasive and extensive phenomenon.

Tax evasion is important for many reasons. The most obvious is that its presence reduces tax collections, thereby affecting taxes that compliant
taxpayers face and public services that citizens receive. Evasion creates misallocations in resource use when individuals alter their behavior to lower their taxes, such as in their choices of hours to work, occupations to enter, and investments to undertake. Its presence requires that government expend resources to deter non-compliance, to detect its magnitude, and to penalize its practitioners. Non-compliance alters the distribution of income in unpredictable ways. Evasion may contribute to feelings of unfair treatment and disrespect for the law. It affects the accuracy of macroeconomic statistics. More broadly, it is not possible to understand the true impact of taxation without recognizing the existence of tax evasion and the economic incidence of tax evasion (Martinez-Vazquez, 1996).

In developing and transition countries (DTCs) in particular, tax evasion is often widespread and, indeed, systemic. Thus, the problem of tax evasion tends to have far more serious consequences in DTCs than in developed economies.

In this chapter we examine what we have learned from the analyses of tax evasion, which for the most part have occurred in the context of developed countries, and what we can apply from these lessons to the problem of tax evasion in DTCs. Specifically, we examine several key issues. First, we present the basic analytical framework of the individual evasion decision, in order to study the major factors that economic theory suggests motivate individuals to evade — or to pay — their taxes. We argue that this basic framework offers some important insights but also suffers from some significant limitations, limitations that arise largely because of its failure to incorporate fully or realistically the role of societal institutions in the analytical framework. Second, then, we examine these institutions, and we argue that the existence of a ‘social norm’ of compliance and the presence of an effective but service-oriented tax administration are crucial, broadly defined societal institutions that influence the magnitude of tax evasion. Indeed, these institutions are closely linked, and jointly determine the extent of tax evasion. Such institutional factors are obviously important in all countries but are especially decisive in DTCs, and, because these institutions are typically so inadequate in such countries, tax evasion is typically so extensive there. Third, we demonstrate the importance of such institutions in DTCs with three case studies: in Jamaica, to demonstrate the important but limited role in developing countries of basic enforcement strategies like higher audit probabilities and penalty rates; in Africa, to demonstrate the crucial role of social norms in compliance decisions; and in Russia, to demonstrate the limited effect of administrative innovations like tax amnesties in a country that lacks both an effective tax administration and a social norm of compliance. We conclude with a discussion on how to improve tax compliance in DTCs.
THEORETICAL FOUNDATIONS OF THE COMPLIANCE DECISION

The standard economic approach to the analysis of tax compliance has relied upon the economics-of-crime methodology pioneered by Becker (1968) and first applied to tax compliance by Allingham and Sandmo (1972). In this section we first review the basic model of individual compliance behavior. There have been numerous extensions to the basic model, and we briefly discuss these extensions. This overall literature is then assessed.3

Consider the standard model of tax evasion. In its simplest form, an individual is assumed to receive a fixed amount of income $I$, and must choose how much of this income to declare to the tax authorities and how much to under-report. The individual pays taxes at rate $t$ on every dollar $D$ of income that is declared, while no taxes are paid on under-reported income. However, the individual may be audited with a fixed, random probability $p$; if audited, then all under-reported income is discovered, and the individual must pay a penalty at rate $f$ on each dollar that he or she was supposed to pay in taxes but did not pay. The individual’s income $I_C$, if caught under-reporting, equals

$$I_C = I - tD - f[t(I-D)] ,$$

while if under-reporting is not caught, income $I_N$ is

$$I_N = I - tD .$$

The individual chooses declared income to maximize the expected utility of the evasion gamble, or

$$E U(I) = pU(I_C) + (1-p)U(I_N) .$$

where $E$ is the expectation operator and utility $U(I)$ is a function only of income. This optimization generates a standard first-order condition for an interior solution; given concavity of the utility function, the second-order condition will be satisfied.4

Comparative statics results are easily derived. It is straightforward to show that an increase in the probability of detection $p$ and the penalty rate $f$ unambiguously increase declared income.6 An increase in income has an ambiguous effect on declared income, an effect that depends upon the individual’s attitude toward risk.7 Surprisingly, an increase in the tax rate $t$ has an ambiguous effect on declared income. A higher tax rate increases the return to cheating, which reduces the amount of declared income. However,
a higher tax rate also reduces income; if, as is usually assumed, the individual exhibits decreasing absolute risk aversion, then the lower income makes the evasion gamble less attractive and declared income increases accordingly (Yitzhaki, 1974).

This economics-of-crime approach gives the sensible result that compliance depends upon enforcement. However, it is essential to recognize that this approach also concludes that an individual pays taxes because—and only because—of the economic consequences of detection and punishment. Again, this is a plausible and productive insight, with the obvious implication that the government can encourage greater tax compliance by increasing the audit and the penalty rates. The many extensions of this economics-of-crime approach considerably complicate the theoretical analyses, and generally render clear-cut analytical results impossible. Nevertheless, they retain the basic approach and the basic result: individuals focus exclusively on the financial incentives of the evasion gamble, and individuals pay taxes solely because they fear detection and punishment.

However, it is clear to many observers that compliance cannot be explained entirely by such financial considerations, especially those generated by the level of enforcement (Graetz and Wilde, 1985; Smith and Kinsey, 1987; Elffers, 1991). For example, the percentage of individual income tax returns that are subject to a thorough tax audit is generally quite small in most countries, often less than 1 percent of all returns. Similarly, the penalty on even fraudulent evasion seldom exceeds more than the amount of unpaid taxes, and these penalties are infrequently imposed; civil penalties on non-fraudulent evasion are even smaller. A purely economic analysis of the evasion gamble suggests that most rational individuals should either underreport income not subject to source withholding or overclaim deductions not subject to independent verification because it is extremely unlikely that such cheating will be caught and penalized. However, even in the least compliant countries evasion never rises to levels predicted by a purely economic analysis, and in fact there are often substantial numbers of individuals who apparently pay all of their taxes regardless of the financial incentives they face from the enforcement regime.

The basic model of individual compliance behavior therefore implies that rational individuals should report virtually no income. Although compliance varies significantly across countries and across taxes, and is often quite low, compliance seldom falls to a level predicted by the standard economic theory of compliance, even in DTCs. It seems implausible that government enforcement activities alone can account for these levels of compliance; the basic model, in its reliance on expected utility theory, is certainly unable to explain this behavior. Indeed, the puzzle of tax compliance behavior is why people pay taxes, not why they evade them (Alm et al., 1992).
observation suggests that the compliance decision must be affected in ways not captured by the basic economics-of-crime approach.

In short, the limited ability to incorporate many relevant factors or to incorporate them in a meaningful way has meant that the standard theoretical analysis of the compliance decision is largely unable to explain the level of tax reporting, even when it has more success in explaining the change in reporting in response to policy innovations. In particular, these models generally imply that rational individuals should pay far less in taxes than they actually do. This is not a mere quibble. It goes to the heart of the basic model, as well as its many extensions, for explaining compliance. Consequently, most of the theoretical analyses that economists have produced in the context of developed economies give limited help in understanding the problem of tax evasion in DTCs. As we argue next, we believe that a meaningful study of tax compliance requires recognition of the important, perhaps decisive, role of societal institutions in the tax compliance decision.

THE ROLE OF SOCIETAL INSTITUTIONS

Social Norms

A first institution is what might be termed the 'social norm' of compliance. Although difficult to define precisely, a social norm can be distinguished by the feature that it is process-oriented, unlike the outcome-orientation of individual rationality (Elster, 1989). A social norm therefore represents a pattern of behavior that is judged in a similar way by others and that therefore is sustained in part by social approval or disapproval. Consequently, if others behave according to some socially accepted mode of behavior, then the individual will behave appropriately; if others do not so behave, then the individual will respond in kind.\(^{13}\)

The existence of a social norm suggests that an individual will comply as long as he or she believes that compliance is the social norm. Conversely, if non-compliance becomes pervasive, then the social norm of compliance disappears.\(^{14}\) It is also likely, though not without controversy, that the social norm of compliance differs significantly across countries. Some evidence to support this variation in social norms is discussed in more detail later.

This perspective also suggests that, if government can affect the social norm of compliance, then such government policies represent another, potentially significant tool in the government's battle with tax evaders. Of course, policies to change the social norm of compliance are difficult to determine in theory. However, there is some evidence from various social
sciences that suggests that these norms can be affected by government institutions and policies.

The role of process in individual and group decisions is becoming increasingly recognized. For example, there is much behavioral science evidence that implies that greater individual participation in the decision process will foster an increased level of compliance, in part because participation implies some commitment to the institution and such commitment in turn requires behavior that is consistent with words and actions. This notion implies that one dimension by which social norms can be affected is via individual participation in the decision process, say, by voting. Also, survey evidence suggests that compliance is higher when taxpayers feel that they have a voice in the way their taxes will be spent. Under such circumstances, they are likely to feel more inclined to pay their taxes.

Another dimension by which social norms may be affected by government actions is related to the level of popular support for the government program. Widespread support tends to legitimize the public sector, and so imposes some social norm to pay taxes. Consequently, it seems likely that there will be more tax compliance when the public good provided to a community is popular. Survey evidence is largely consistent with this hypothesis.

Still another dimension by which social norms can be changed is the government’s commitment to enforcing the tax laws. In fact, as we emphasize later, it seems likely that there is a constant interaction between social norms and tax administration. If the perception becomes widespread that the government is not willing to detect and penalize evaders, then such a perception legitimizes tax evasion. The rejection of sanctions sends a signal to each individual that others do not wish to enforce the tax laws and that tax evasion is in some sense socially acceptable, and the social norm of compliance disappears. Such an outcome is common in many countries, such as the Philippines and Italy where it seems to be accepted that tax evasion is the norm. The introduction of a tax amnesty may also affect the social norm of compliance. A tax amnesty gives individuals an opportunity to pay previously unpaid back-taxes without being subject to the penalties that the discovery of evasion normally brings. Such amnesties may reduce compliance if honest taxpayers resent the tax forgiveness given to tax cheats (and if individuals believe that the amnesty may be repeated again). The role of tax amnesties is discussed in more detail later.

In their entirety, the various influences of the social norm of compliance can be classified into two basic categories. The first relates to how the taxpayer judges his or her own compliance behavior in light of the individual’s own feelings about what is proper, acceptable, or moral behavior, what might be termed ‘internal norms’. The second relates to
whether other taxpayers are perceived as paying their fair burden of taxes and to how the taxpayer feels he or she is treated by government in such areas as the payment of taxes, the receipt of government services, or the responsiveness of government decisions (or ‘external norms’).

We believe that there is considerable intuitive appeal to the potential importance of social norms in tax compliance behavior. There is strong evidence that many countries with roughly the same fiscal system exhibit far different patterns of compliance. There is also much survey evidence from many countries that indicates that compliance is strongly affected by the strength and commitment to the social norm of compliance. These surveys conclude, among other things, that those who comply view tax evasion as ‘immoral’, that compliance is higher if a ‘moral appeal’ to the taxpayer is made by the government, that the low social standing of tax evaders can be an effective deterrent, that individuals with tax evaders as friends are more likely to be evaders themselves, and that compliance is greater in communities with a stronger sense of social cohesion. Other survey evidence suggests that some people will not pay their taxes if they dislike the way their taxes are spent, if they feel they have no say in the decision process, if they feel that the government is unresponsive to their wishes, or if they feel that they are treated unfairly by the government. There is also some empirical, experimental and simulation evidence that compliance is affected by the nature of the collective decision process, at least in democratic countries (Pommerehne and Weck-Hannemann, 1989; Alm, Jackson and McKee, 1993; Pommerehne et al., 1994). It may well be that such sentiments play an important, perhaps a dominant, role in tax compliance.

However, there is not full agreement on this issue. Tanzi and Pellechio (1995) argue that the role of social norms in overall compliance is often exaggerated. In their view, given the right incentives and institutions, taxpayers would tend to behave the same, regardless of where they reside. To support their argument, they cite a number of countries (for example, Chile, Peru, Mexico, Uganda, Ghana) where overhauls of tax administrations produced significant increases in revenue collections. However, it is not clear that these improved performances have been sustainable (for example, Mexico’s revenues eventually decreased) without a deeper transformation of the fiscal exchange between governments and taxpayers (for example, this may have been the case in Chile). At any rate, in our view the hypothesized impact of social norms on tax compliance does not contradict but rather has a symbiotic relationship with the strengthening and effectiveness of tax administration institutions in a country.

To illustrate the ways in which a social norm might alter the analysis of the compliance decision, consider a slight modification of the earlier compliance modelke. As before, an individual member, now denoted i, of a
larger group is assumed to receive a fixed amount of income, and must choose the amount to declare to the tax authorities. The individual pays taxes on each dollar of declared income. Undeclared income is not taxed, but the individual may be audited with some random probability, at which point a fine is imposed on each dollar of unpaid taxes. Now, however, assume also that the total taxes paid by all individuals in the group are summed, increased by a multiplier $m$ that may be greater than or less than one, and divided in equal shares $s$ among all members of the group; a multiplier greater than one reflects the positive consumers’ surplus associated with government provision of a public good, while a multiplier less than one implies potential misuse or waste in government provision.

To simplify the analysis, assume that the individual chooses declared income to maximize the expected value of the evasion gamble, an approach that is implied by expected utility maximization when the individual is risk-neutral. Note that the assumption of risk-neutrality is not essential for our analysis, but serves mainly to simplify the derivation of our results.

The expected value $EV_i$ to individual $i$ from the choice of declared income is

$$EV_i = I_i - tD_i + mst(\sum_j D_j) - pf(i_i - D_i).$$

Maximization of $EV_i$ by the choice of declared income $D_i$ indicates that individual $i$ will optimally report all income if

$$pf + ms > I_i,$$

while the individual will report zero income if the inequality is reversed. The individual’s decision here is therefore all-or-none: the individual reports either all income or zero income. The presence of risk-aversion modifies the all-or-none nature of individual behavior, without changing the basic comparative statics results.

There are several ways in which the role of social norms can be introduced in the model of self-interested individual behavior. Perhaps the simplest way is suggested by Kahneman and Tversky (1979), who incorporate what they term a ‘reference point’ as a form of social norm in prospect theory. They assume that a loss in utility occurs if individuals do not achieve some reference point, a phenomenon they call ‘loss aversion’. The social norm may be achieved by reporting all income and paying all taxes; individuals who declare less than their full income and pay less than their full taxes suffer a loss in utility.
More formally, assume that each individual $i$ now maximizes $EV_i^*$, defined as

$$EV_i^* = I_i - tD_i + mst(\sum_j D_j) - pf(1 - D_j) - \gamma_i t(1 - D_j)$$

where $EV_i$ is defined by equation (7.4). The individual now is assumed to suffer a psychological loss in expected income proportional to undisclosed taxes, and the coefficient $\gamma_i$ measures as a fraction of income how much individual $i$ would pay to avoid the loss associated with each dollar of unreported taxes. Condition (7.5) for compliance now becomes modified to

$$pf + ms > 1 - \gamma_i,$$

which still allows for the deterrent effect of audits and fines but which is more easily satisfied than condition (7.5) (and is more easily satisfied the larger is $\gamma_i$). Clearly, $\gamma_i$ is likely to be sensitive to the social norm of tax compliance. The stronger is the social norm, the more deviant the behavior of a non-compliant individual becomes, and the more loss the individual feels. Also, $\gamma_i$ is likely to be affected by the nature of the fiscal exchange.

In summary, the investigation of the impact of social norms on compliance behavior is a promising avenue of research for understanding tax evasion in DTCs. To the extent that these norms are influenced by the responsiveness of government to its citizens’ needs and the effectiveness of government institutions, including the tax administration, the scope of government policies to combat tax evasion is significantly broader than that implied by the standard economic approach. It should not come as a surprise to many government officials in DTCs that controlling tax evasion will require improving overall governance and delivering value for money to taxpayer-citizens.

**Tax Administration**

A second institution is the administrative machinery of the government tax agency. The administrative dimension of taxation has long been recognized by tax administrators and practitioners in a long list of country studies, and it has frequently been flagged by economists working on tax policy in developing countries (Goode, 1981; Bird, 1989; Das-Gupta and Mukhajee, 1997). A ‘tax administration’ exists to ensure compliance with the tax laws, and much of the discussion of tax administration is consistent with the economics-of-crime approach discussed earlier. However, as emphasized by
Bagchi et al. (1995), it is helpful to view the tax administration process somewhat more broadly, as a production function in which ‘inputs’ like personnel, materials, information, laws and procedures are used to produce several ‘outputs’, the most important of which is government revenue, but which also includes taxpayer satisfaction, equity and social welfare.

With these goals in mind, tax administration reform in DTCs emphasizes a variety of measures, including such traditional policies as:

- Introducing an effective audit program that identifies individuals who do not file tax returns as well as those who under-report income or overclaim deductions and credits
- Applying non-harsh penalties often and consistently
- Using source-withholding whenever possible
- Facilitating payments through the banking system
- Making use of third-party sources of information to verify reporting behavior

These inputs view the taxpayer as a potential criminal who must be deterred from cheating.

However, it is increasingly the case that inputs are not limited to these traditional enforcement mechanisms. Instead, tax administrations in many developing countries are also introducing policies that emphasize the provision of taxpayer services via such things as:

- Promoting taxpayer education and developing taxpayer services to assist taxpayers at every step in filing returns and paying taxes
- Broadcasting advertisements that link taxes with government services
- Simplifying taxes and the payment of taxes
- Promoting voluntary compliance by lowering the costs for taxpayers associated with filing their taxes
- Ensuring relative stability of the tax system
- Adopting the general principle of self-assessment
- Promoting a taxpayer – and a tax administrator – ‘code of ethics’.

Put differently, the taxpayer is no longer seen simply as a potential criminal but as a potential client. This new approach suggests a different paradigm for tax compliance than one that emerges from traditional analysis. These alternative paradigms are discussed next.
Two Paradigms

Our discussion of social norms and tax administration suggests that two very different paradigms can be followed in encouraging tax compliance, each with very different implications for tax compliance behavior. Under the first paradigm, taxpayers are viewed and treated as potential criminals, and the emphasis is exclusively on repression of illegal behavior through frequent audits and stiff penalties. This has been the conventional paradigm of tax administrations through history, and it fits well the standard economic model of tax evasion based on the economic theory of crime. A second paradigm recognizes the role of enforcement, but also emphasizes the role of tax administration as a facilitator and a provider of services to taxpayer-citizens. This new paradigm for tax administration fits squarely with the perspective that emphasizes the role of social norms in tax compliance; that is, the government can change tax compliance by changing the social norm of tax compliance.\(^\text{17}\)

In fact, the most recent literature on tax administration reform for DTCs (Bird and Casanegra de Jantscher, 1992; Bagchi \textit{et al.}, 1995; Tanzi and Pellechio, 1995; Silvani and Baer, 1997) has largely emphasized the new paradigm of the role of tax administration, as a facilitator and a provider of services to taxpayer-citizens. Some recent administrative reforms around the world have also embraced this new paradigm with great success. One of the best examples is provided by Singapore’s tax administration reform over the last decade (Bird and Oldman, 2000). The main tenet of Singapore’s reform is service-oriented: the conversion from a hard-copy filing system to a paperless imaging system, the extensive use of electronic filing, a one-stop service to answer inquiries about any type of tax, the ability for filers to see the entire tax form with any corrections before it is submitted, the use of interest-free installment plans for paying taxes with direct deduction from bank accounts, separate functional areas within the tax administration with little opportunity for corruption, and a changed attitude of officials toward taxpayers. During the last decade, the tax administration service of Singapore went from being the lowest rated government agency in public satisfaction to one that 90 percent of the taxpayers found to provide courteous, competent and convenient services. Of course, most countries, especially those among DTCs, will not be able to imitate Singapore’s reforms fully. Nevertheless, there is much to be gained in improved tax compliance in DTCs by reforming their tax administrations along the lines of the new paradigm.\(^\text{18}\)
TAX COMPLIANCE IN PRACTICE: SOME COUNTRY CASE STUDIES

We have argued that the standard economic model of evasion offers some important insights into tax evasion, but that it also suffers from some significant limitations because of its failure to incorporate realistically the role of societal institutions such as the ‘social norm’ of compliance and the presence of an effective tax administration. These institutional factors are especially critical to understand tax compliance issues in DTCs. In this section we employ three country case studies to illustrate the importance of such institutions in DTCs. The Jamaica case study demonstrates the important but limited role in developing countries of basic enforcement strategies based only upon higher audit probability and penalty rates. The Africa case study demonstrates the crucial role of social norms in compliance decisions. The Russia case study demonstrates the limited effectiveness of isolated administrative innovations like tax amnesties in a setting that lacks both an effective tax administration and an accepted social norm of tax compliance.

The Impact of Standard Enforcement Methods: The Case of Jamaica

In 1983 the Government of Jamaica instituted a comprehensive reform of the Jamaican tax system, including the individual income tax. At that time, income tax collections accounted for 28.9 percent of total government revenues and 7.6 percent of national income. Over 90 percent of these revenues were collected from employers withholding taxes on employee wages, under a Pay-As-You-Earn (PAYE) system. The remaining 10 percent of revenues came from individuals who were required to file a return upon which taxes on other sources of income were paid, or so-called ‘self-employed’ taxpayers. Although there have been significant changes in the tax system since that time, the individual income tax remains a major part of the Jamaican system.

In theory, the Jamaican income tax prior to reform was broad-based, with a high and steeply progressive rate structure that rose from a marginal tax rate of 30 percent on the first $J7,000 of taxable (or statutory) income to 57.5 percent on all income above $J14,000. In practice, the base of the income tax was substantially reduced by a variety of legal and illegal methods. Taxpayers could receive up to 16 credits for purposes such as participation in savings and insurance programs, employment of household helpers, and personal and family credits. A more substantial narrowing of the base was due to the provision to employees of non-taxable ‘allowances’ (or fringe benefits), as well as to the preferential treatment of income earned from
overtime activities; such overtime income was taxed at the lowest marginal tax rate of 30 percent, even if the individual's total income placed him or her in a higher marginal tax bracket. The tax base was also narrowed by tax evasion via under-reporting of taxable income, overclaiming of tax credits, and non-filing of individual income tax returns.

Five separate payroll taxes, payable by both workers and firms, were also imposed on approximately the same base as the individual income tax. Of these five programs, three provided benefits to individuals (for example, disability and old-age benefits, housing subsidies, government employee pensions) that were related to their contributions. The combined employee and employer marginal tax rate in each program was constant, varying from 2 to 5 percent. In total, these payroll taxes were quite large, roughly half of the revenues from the income tax, and they imposed a significant, additional burden on taxpayers.

As part of the tax reform, individuals working with, and with the full cooperation of, the Revenue Board of the Government of Jamaica, collected several types of information that allowed a detailed examination of the individual income tax (as well as of the payroll taxes). One data set focused upon the responsiveness of PAYE employees to fiscal incentives (for example, the marginal income and payroll tax rate, the audit rate, the penalty rate, and the benefit rate of the payroll program) in their choice of taxable reported income, of legally non-taxable allowances, and of illegally underreported income (Alm, Bahl and Murray, 1990). Another combination of data sets examined self-employed taxpayers, and allowed estimation of the criteria by which self-employed income tax returns were selected for audit and the responses of these taxpayers to fiscal incentives (Alm, Bahl and Murray, 1993). Still another data set examined the prevalence of non-filing of tax returns (Alm, Bahl and Murray, 1991). Here we focus on the PAYE results.

During the initial stages of the tax reform in 1984, the Revenue Board requested that all Jamaican firms in the PAYE sector provide information on compensation for each employee. By January 1985, 1345 firms had reported information for 69,724 workers, or 25 percent of the PAYE labor force. The intent of this ‘PAYE Survey’ was to gather information on the extent of employer provision of untaxed forms of compensation. Each firm gave information for each of its employees on taxable cash compensation and non-taxable in-kind information; firms also provided information on taxes withheld and total tax credits. It was initially believed that the PAYE Survey provided estimates only of reported taxable income and non-taxable allowances. However, detailed examination of these data revealed numerous instances in which there were serious discrepancies between taxes actually
withheld and the statutory tax liability implied by tax credits and taxable income. In nearly all circumstances, the discrepancies were shortfalls.

Various possible explanations for the discrepancies were explored: random mistakes by the employer or the Jamaican Income Tax Department, preferential taxation of legitimate overtime income, and correct tax liabilities of individuals with large but unreported business-related expenses. In all cases, these explanations were rejected. Instead, the most convincing explanation for the discrepancies was that they were due to intentional efforts to defraud the tax authority via tax evasion. Employees clearly had an incentive to get their employer to underwithhold, and employers had an incentive to accede to such employee requests. For a given total compensation cost to the firm, the employer can provide greater net compensation to the worker. The employer faced virtually no risk in this practice because by law it is the employee who would be prosecuted if detected.

Cash compensation in the PAYE Survey therefore was likely to consist of reported taxable income and evasion compensation. Together with PAYE Survey information on non-taxable allowances, the Survey allowed estimation of the determinants of worker choice between reported income, evasion income and allowance income. These estimation results are discussed in detail by Alm, Bahl and Murray (1990).

The dependent variables in this estimation were the shares of total compensation allocated to reported, evasion and allowance income. The explanatory variables consisted of various measures of firm size and indicators of firm sector. Importantly, the PAYE Survey allowed construction of a number of variables that influenced the 'price' of the different income types for each taxpayer, or the amount of gross compensation that must be chosen to receive one dollar of net compensation: the marginal income tax rate on reported income, the marginal penalty rate on evasion income, the marginal payroll tax rate on cash compensation, the marginal payroll tax benefit rate, and the (predicted) probability of detection. These various components were combined into a price for each type of income, and these prices were included as explanatory variables in each share equation.21 The equations were estimated by Tobit maximum likelihood estimation, and the estimation results are summarized in Table 7.1.

As shown in Table 7.1 the own-price effects are generally significant and of the expected (negative) sign, while the cross-price effects are symmetric and generally significant; that is, individuals respond predictably to changes in the tax, penalty, audit and benefit rates. Taken in their entirety, the estimated price coefficients suggest a complicated behavioral response to the various policy instruments. For example, an increase in the probability of detection will generate a negative own-price effect on the tax evasion share.
### Table 7.1 The case of Jamaica: selected PAYE survey estimation results

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Independent variable</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Full PAYE survey</td>
</tr>
<tr>
<td>Reported income share</td>
<td>Own-price of reported income</td>
<td>-0.6147*</td>
</tr>
<tr>
<td></td>
<td>Cross-price of allowance income</td>
<td>3.4515*</td>
</tr>
<tr>
<td></td>
<td>Cross-price of evasion income</td>
<td>-2.2574</td>
</tr>
<tr>
<td></td>
<td>intercept</td>
<td>13.2761*</td>
</tr>
<tr>
<td>Avoidance income share</td>
<td>Cross-price of reported income</td>
<td>1.3190*</td>
</tr>
<tr>
<td></td>
<td>Own-price of allowance income</td>
<td>-3.8091*</td>
</tr>
<tr>
<td></td>
<td>Cross-price of evasion income</td>
<td>2.2319*</td>
</tr>
<tr>
<td></td>
<td>intercept</td>
<td>-3.5242*</td>
</tr>
<tr>
<td>Evasion income share</td>
<td>Cross-price of reported income</td>
<td>-1.0296*</td>
</tr>
<tr>
<td></td>
<td>Cross-price of allowance income</td>
<td>1.2689*</td>
</tr>
<tr>
<td></td>
<td>Own-price of evasion income</td>
<td>-1.2744*</td>
</tr>
<tr>
<td></td>
<td>intercept</td>
<td>-8.4740</td>
</tr>
</tbody>
</table>

**Notes:**
The estimated equations also included dummy variables for firm size and, for the full sample estimation, a dummy variable for firm sector.
* Significant at the 0.05 level.
However, the cross-price effect on reported compensation will also be negative, thereby reducing the tax base, and the cross-price effect on allowance income will be positive.

Importantly, however, the estimated tax base elasticities are quite small. The largest reported income elasticity is to a change in the marginal income tax rate (-0.19). The other reported income elasticities are even smaller. The penalty elasticity is -0.08, the payroll elasticity is 0.07, and the probability elasticity is only -0.01.22

Overall, the PAYE results suggest that the enforcement regime in Jamaica, and perhaps in most developing and transition countries, is not a major deterrent to tax evasion. Relatedly, the results also suggest that very large discretionary changes in the policy variables are required to induce a significant change in taxpayer behavior; that is, even significant administrative reforms in enforcement of the tax laws are of limited use in affecting compliance decisions. Consequently, policies based upon the traditional punishment paradigm can affect compliance but only to a limited degree.

The Role of Social Norms: The Case of Southern Africa

Reducing tax evasion is not only a matter of applying higher penalties or increasing the frequency of audits. To develop policies for the reduction of tax evasion, it is essential to understand the behavioral aspects of the tax compliance decision. If individual attitudes toward tax compliance are a function of social norms, tax enforcement policies may have to be designed specifically for the culture in which they will be applied. However, the effects of social norms on tax compliance are not well understood, and it seems unlikely that analyses based upon theory or field data will be of much use here. In part because of the limitations of theoretical and empirical approaches, economists have turned increasingly to the use of experimental methods in the analysis of tax compliance.

Experimental methods are particularly useful for the study of some aspects of the compliance decision. Unlike theoretical work, experiments are not as constrained by the same degree of simplification required in analytical studies. Unlike empirical work, experiments generate data under different settings in which there is control over extraneous influences; that is, the experimenter can hold the tax reporting institution constant (including the enforcement effort, the tax rate and the income levels), in order to investigate compliance behavior across various cultural settings. The experimental approach is therefore ideally suited to investigate the question of whether different social norms, as they arise from different societal institutions across countries, have a significant impact on tax compliance behavior. This section
reports on the results of the laboratory experiments on tax compliance behavior conducted by Cummings et al. (2001) in South Africa, Botswana and the United States, experiments designed to examine the role of social norms in compliance decisions.

These experimental results provide support for the hypothesis that tax compliance increases with individual perceptions that the tax system is fair and that the government is providing valued goods and services with the revenues. In all of the cultural settings investigated, compliance increases with enforcement effort, but this is a less effective mechanism where the tax regime is viewed as unfair. Therefore these results provide support for a model of tax compliance behavior that extends well beyond the typical economics-of-crime approach with its exclusive emphasis on deterrence. Put differently, the experimental results support the view that tax enforcement should focus more on how taxpayers assess government services and less on how governments impose punitive measures.

In order to understand the differences in social norms in Botswana, South Africa and the USA, it is necessary to understand the role of societal institutions, including tax administration and citizen attitudes toward government, in the three countries. Consider first tax administration. The self-assessment and audit processes are broadly similar across the three countries. However, there are varying degrees of aggressiveness in enforcement, and the level of development and sophistication of the tax enforcement apparatus also differ across the three countries. The USA has one of the most advanced tax administration systems in the world in its Internal Revenue Service (IRS), Botswana’s tax administration system is still developing, and the situation in South Africa is somewhat between these poles. USA tax administration depends heavily on self-assessment and reporting of tax liabilities, along with an extensive tax withholding system. The audit process is generally regarded with dread on the part of the taxpayer, and there is a great deal of uncertainty, fostered by the IRS, surrounding the audit selection process and the determination of penalties. This strategy has been effective but not without cost. A considerable portion of the public backlash against the IRS has been due to the perception that the IRS is capricious in its enforcement precisely because the rules and penalties are not stated explicitly. South Africa also relies heavily on self-reporting and a system of withholding, and treats tax evasion as a serious crime. The South African tax authority, like its USA counterpart, exploits high profile cases to reinforce its reputation for tough enforcement. In Botswana, on the other hand, the attitude of the tax authority seems to be more accommodating. Botswana also has lower marginal tax rates, with the personal income tax capped at 25 percent, which is lower than the top rates in South Africa (45 percent) and the USA (39.6 percent).
There are also differences in the public perception of government, the equity of the tax system, and the penalties imposed for evasion. In the USA there is a tradition of democratic decision-making, so that there is on the part of many a certain trust for government. However, the IRS is often viewed as invasive, and the tax auditing system is sometimes seen as unfair and capricious (Yankelovich et al., 1984). Actions of the IRS often garner a great deal of negative publicity, such as that arising from its recent decision to audit those claiming the earned income tax credit.

Botswana is virtually unique among African countries. Although it only gained independence in 1966, diamond-rich Botswana is one of Africa’s oldest multiparty democracies, and it has successfully made the transition to self-governance. Several elections have been held since independence, and all have been quiet affairs with none of the violence or corruption that has accompanied elections in neighboring countries. In fact, the government of Botswana takes great pride in its stability, and refers to itself as the ‘gem of Africa’ in many official publications. The message here is clear: the government is working and working for you, and paying taxes is part of this social contract.

The Botswana experience is in marked contrast with South Africa with its well-known history of apartheid. Indeed, the recent elections in South Africa have been controversial and often accompanied by violence, and both the white and black populations are for different reasons suspicious of the government. Crime rates are among the highest in the world, there is a widespread perception that the government is corrupt, and there is a feeling that the social order is somewhat fragile. In this context, the notion of a social norm to pay taxes is very weak.

In sum, while the United States scores highest in government openness and equality, the tax system and the perception of the public sector in Botswana seem to be rated the highest. South Africa is rated lowest on all counts.

The laboratory experiments replicate most of the elements of the basic structure of the personal income tax system in the three countries. Human subjects in a controlled laboratory are told that they should feel free to make as much income as possible. At the beginning of each round of the experiment, individuals receive income, and they must decide how much income to report. They pay taxes on income voluntarily reported. They do not pay taxes on unreported income. However, they face a probability of audit, and, if they are detected evading, they pay a penalty on taxes not reported. This process is repeated for a given number of rounds, and at the end of the experiment each subject is paid an amount that depends upon his or her performance during the experiment. The experiments are fully computerized, and the subjects interact with a simplified tax form on the
computer screen. Because the experimental setting controls for the tax rate, the probability of detection and the penalty rate, and because all subject pools are subjected to identical parameters in the three countries, the observed differences in tax compliance behavior are interpreted as motivated by differences in those institutional features that may affect attitudes toward the government (and by other possible factors that may capture differences in the social norms across the countries).

Cummings et al. (2001) test two basic hypotheses. The first is that compliance levels increase as the audit probability increases and as the penalty rate increases. The second, and main, hypothesis focuses on differences in compliance behavior due to differences in social norms. Based upon the differential levels of development of societal institutions in the three countries, the second hypothesis states that compliance rates from the experiments will be higher in Botswana and the USA than in South Africa and also higher in Botswana than in the USA.

Cummings et al. (2001) report Tobit maximum likelihood estimation results in which the individual compliance rate is estimated as a function of various explanatory variables including dummy variables for the country in which the experiments are performed. The basic specification introduced dummy variables for subject pools from Botswana and the USA with the control group being South Africa. Their estimation results generally supported the argument of a significant effect of social norms on compliance behavior. Compliance was higher in Botswana and in the USA than in South Africa, with the only exception of the USA private university pool. The compliance rate was also generally higher in Botswana than in the USA. It is important to remember that risk attitudes cannot explain compliance differences because all subject pools generally exhibited the same attitudes toward risk in a simple gamble experiment that was context-free. In summary, the experimental results suggested that the observed differences in compliance behavior are closely related to societal institutions, including the perception of government behavior by taxpayers and the effectiveness of tax administration.25

The Effects of Tax Amnesties: The Case of the Russian Federation

During its entire transition period, the Russian Federation has suffered from lagging tax collections and widespread tax evasion. The Russian tax authorities have attempted to reform the tax system, but have only partially succeeded.

As part of its overall fiscal program, the Russian Federation has enacted a number of tax amnesties. This practice in Russia follows the practice in many countries around the world, of introducing one or more amnesties. An
amnesty typically allows individuals or firms to pay delinquent taxes without being subject to some or all of the financial and criminal penalties that the discovery of tax evasion normally brings.

Tax amnesties are a controversial revenue-raising tool. Advocates of amnesties emphasize the immediate and short-run revenue impact, as individuals take advantage of the grace period to pay unpaid taxes. Advocates also argue that future tax compliance (and therefore future tax revenues) may increase if the amnesty induces individuals not on the tax rolls to participate, and if the amnesty is accompanied by more extensive taxpayer services, better education on taxpayer responsibilities, and, especially, stricter post-amnesty penalties for evaders and greater expenditures for enforcement. Critics contend that the actual experiences of many countries indicate that the immediate impact on revenues is almost always quite small. They also question the long-run impact of a tax amnesty. If honest taxpayers resent the special treatment of tax evaders, then their compliance may decline. Further, if individuals come to believe that the amnesty is not a one-time opportunity, then they may reduce their current compliance in anticipation of another, future amnesty.26

Many of these issues have been examined, especially for state governments in the United States. The experiences there, as well as those in many other countries, suggest that amnesties are unlikely to be any kind of fiscal panacea, but are also unlikely to be any kind of fiscal poison. In particular, the available evidence indicates that a tax amnesty typically generates only a small amount of additional tax revenue; multiple amnesties are even less successful in generating additional revenues, and they have mild but perverse effects on voluntary compliance as taxpayers incorporate the expectation that future grace periods will occur. Importantly, successful amnesties are accompanied by administrative changes that substantially increase post-amnesty enforcement. An amnesty that is followed by an enhanced enforcement regime and improved taxpayer education generally increases, or at least does not decrease, voluntary tax compliance. In fact, if increased enforcement activities and improved organization of the tax administration are already planned by the tax authorities, then a tax amnesty may be an effective tool for easing the transition to a new, tougher tax regime. Such an amnesty offers several advantages: the amnesty generates some immediate tax revenue, individuals with past evasion are not locked into continued evasion, and the government both clears its ledgers of accounts receivables and adds the names of past evaders to its records. It is essential, however, that individuals believe that improved enforcement will occur: the government must have credibility.

These experiences suggest that the multiple Russian amnesties would be irrelevant at best and counterproductive at worst. Here we discuss some
evidence from Alm et al. (2001) on the effects of the multiple tax amnesties enacted in the Russian Federation since 1993 on tax collections.

The first amnesty was introduced on 27 October, 1993 as Presidential Decree No. 1773. This decree established an amnesty from 27 October to 30 November, 1993, and stipulated that all enterprises, organizations, and private entrepreneurs who disclosed their unpaid taxes and tax payments for 1993 and all proceeding years would not be liable for any sanctions on these unpaid liabilities. The Decree also specified that any concealed incomes discovered after 30 November would be penalized by the State Tax Service (STS) at three times the unpaid tax liability.\(^{27}\) As part of the amnesty, banks were required to provide the STS with account information. However, the design of the amnesty was flawed by the short period within which a taxpayer was allowed to disclose unpaid tax obligations, by the requirement that the liability be repaid within one month, and by a failure to allow for inadvertent or unintended mistakes. The 1993 amnesty was repealed by Presidential Decree 746 on 21 July, 1995.

The next amnesty was introduced by Presidential Decree No. 65 on 19 January, 1996 (with amendments on 22 April, 1996). Under this Decree, enterprises and organizations with tax arrears were allowed to defer payments on the arrears, provided that all current payments were made in time and in full. Enterprises and organizations that were granted deferments were required to pay 50 percent of the total amount due by October 1998, with payment made via quarterly payments of 5 percent of the liability; interest penalties were imposed at an annual rate of 30 percent on unpaid amounts. This Decree was widely seen by taxpayers as too burdensome. In any event, this amnesty was continued in somewhat modified form by Presidential Decree No. 685 on 8 May, 1996. Provisions of the new Decree that were immediately effective included such things as reduced interest penalties on late payments and on tax arrears and an allowance for ‘technical errors’ (or simple arithmetic mistakes) in the preparation of tax returns, all of which were intended to reduce the burden of tax payment and which appeared to introduce a true tax amnesty.

Presidential Decree No. 65 was followed roughly a year later by Budget Law 29-FZ of 26 February, 1997, which established guidelines for newly granted deferments on taxes and other mandatory payments. Importantly, the Law asked that the government specify the procedures by which tax arrears were to be handled. These procedures emerged in Budget Law No. 42-FZ of 26 March, 1998, and amounted to a substantial reduction in penalties on arrears.

In total, given the poor quality of tax administration in the Russian Federation, these various amnesties and related provisions were seen by tax officials as an easy and attractive way of dealing with delinquent tax
liabilities, especially those of mounting tax arrears. However, the almost yearly enactment of some form of amnesty contributed to the widespread belief that amnesties would be a regular event. As suggested by international experience, a further drawback of the many amnesties was that they were not accompanied by substantive tax reform in the Russian Federation, at least until very recently (Martinez-Vazquez and Wallace, 1999). The effects of the amnesties on tax collections therefore emerged as a matter of some concern.

These amnesties must be seen in the context of the overall Russian tax system. This tax system is a complex system of federal, state and local taxes, and the system has undergone change each year since 1992 (Martinez-Vazquez and Wallace, 1999; forthcoming). In the early years, new taxes were introduced, most notably the value-added tax (VAT); in more recent years, detailed changes have regularly been made to the major taxes. The tax system is similar to that of developed countries in its reliance on the VAT, excise taxes and income taxes. However, the system lacks the sophisticated tax administration required to uphold the tax system. Moreover, the lack of comprehensive tax policy development has resulted in a system that imposes a myriad of taxes on businesses and individuals, thereby complicating compliance and lowering taxpayer confidence in the system. The resulting system is complex, and the multiple layers of taxes result in heavy statutory burdens on labor and capital income.

Overall, revenues as a percentage of GDP fell from about 30 percent in 1992 to around 21 percent in 1999 (Table 7.2). This level of tax revenues is not low by some international standards, and lies in the range of ‘upper-middle income countries’ and above that of ‘lower-middle income countries’ (USGTA, 1999). Russia’s tax effort is also quite similar to that found in the Baltic States. A comparison of similar statistics for total consolidated government tax revenues relative to GDP also demonstrates that Russia is close to the middle of the pack; Germany, the Czech Republic, Hungary and Canada have higher ratios, but the United States, South Africa and Argentina have lower ratios.

However, the trend of tax revenues relative to GDP is more troubling. This ratio fell from 1992 to 1999, and it is likely that it has continued to fall relative to the lower-middle and upper-middle income peer groups. It is clear that Russia is not generating the level of revenues that it should be producing, given the sophisticated statutory structure of the tax system and the high tax rates on certain types of income. This failure is due to problems with compliance and general administration of the tax system.

The tax system in the Russian Federation is haunted by many characteristics of the Soviet system. Under the previous regime, taxes completely lacked transparency. Often, enterprises did not know what other
Table 7.2 The case of the Russian Federation: tax receipts as a percentage of GDP (consolidated budget)

<table>
<thead>
<tr>
<th>Year</th>
<th>Consolidated tax receipts (reported), as a percentage of GDP</th>
<th>Consolidated tax receipts (adjusted for consistency over time), as a percentage of GDP</th>
<th>Deficits (reported), as a percentage of GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992</td>
<td>29.60</td>
<td>26.40</td>
<td>18.90</td>
</tr>
<tr>
<td>1993</td>
<td>28.91</td>
<td>23.68</td>
<td>7.30</td>
</tr>
<tr>
<td>1994</td>
<td>29.04</td>
<td>23.90</td>
<td>10.40</td>
</tr>
<tr>
<td>1995</td>
<td>22.68</td>
<td>22.68</td>
<td>6.00</td>
</tr>
<tr>
<td>1996</td>
<td>22.04</td>
<td>22.04</td>
<td>8.60</td>
</tr>
<tr>
<td>1997</td>
<td>22.70</td>
<td>22.70</td>
<td>7.60</td>
</tr>
<tr>
<td>1998</td>
<td>20.27</td>
<td>20.27</td>
<td>8.00</td>
</tr>
<tr>
<td>1999</td>
<td>21.39</td>
<td>21.39</td>
<td>1.90 (estimate)</td>
</tr>
<tr>
<td>2000</td>
<td>---</td>
<td>---</td>
<td>1.00 (projected)</td>
</tr>
</tbody>
</table>

Sources: Ministry of Finance and GSU/USAID Fiscal Reform Project. Prior to 1995, budget receipts were not classified according to tax and non-tax receipts.

Taxpayers in similar circumstances paid in taxes, and the population at large was neither aware of taxes nor had any perceptions of tax burdens. Very few individuals actually filed tax returns, paid taxes during transactions, or were aware of the existence of turnover taxes or profit taxes. This tax system created a taxpayer culture of mistrust of government and of non-compliance that endures today. Taxpayers tend to believe that tax burdens are distributed arbitrarily and that the government is wasteful if not corrupt. Many taxpayers continue to refuse to pay taxes through non-filing of returns and under-reporting of income. Also, negotiated taxes were the main feature of the tax system in the Soviet Union, and, after the years of transition, Russia’s tax system still retains an important element of negotiation. This is most apparent in how settlements are reached on the payment of tax arrears, which are composed of delinquent payment of taxes and deferred payments as agreed upon between the tax authorities and taxpayers. Tax arrears are a pervasive fact in the Russian economy, and have had a significant impact on the performance of the tax system. Tax arrears appeared early in the transition, and, although their level has oscillated, their trend has been a clearly increasing one. By the end of 1998 tax arrears to government stood at R 503.1, or roughly 16 percent of GDP. By comparison, the combined tax collections of the federal and sub-national governments for 1998 were R 544.1 billion (Ivanova and Wyplosz, 1999), so that existing arrears were roughly equal to total tax collections. While tax collections at the federal and
sub-national level increased by 149.3 percent between 1995 and 1998, in the same period tax arrears increased by 584.8 percent.

There are multiple causes for the growth in arrears in the Russian Federation (Alfandari and Schaffer, 1996; Alexeev, 1998; Ivanova and Wyplosz, 1999). Importantly, a policy designed by the federal governments to combat arrears seems to have made the problem worse: the use of periodic tax amnesties. Each amnesty seems to have built up expectations that new arrears would be at least partially forgiven in the future.

Alm et al. (2001) examine the revenue impact of these amnesties, using monthly data on tax collections of the Russian Federation, for the period January 1995 to December 1998. They focus on the enterprise profits tax (EPT), the value added tax (VAT), excises from a number of specific commodity taxes, and the total monthly revenues from these three taxes combined; they also calculate the total monthly revenues from all revenue sources, including the EPT, the VAT, and excises, plus separate taxes on securities, on personal income, on property, on licenses, on land, and on natural resources, as well as on the sum of total combined arrears and total revenues.

Some initial indications of the likely effects of the amnesties on revenues can be seen in Figure 7.1, which shows monthly total revenues from all taxes plus the change in the stock of arrears. This Figure clearly shows that the enactment of the amnesties in 1996 and 1997 had no discernible impact on

![Figure 7.1 Total revenue plus change in stock of arrears, real monthly collections](image-url)
the trends of collections in the Russian Federation. Other revenue breakdowns that look separately (or in combination) at the EPT, the VAT, and the excises similarly show no systematic effect of the amnesties.

Alm et al. (2001) estimate the impact of the amnesties on these various measures of tax collections, by introducing several dummy variables to represent the impacts of the two amnesties introduced over their sample period. Their estimation results for each of the various taxes, as well as for the totals, indicate that the impact of the 1996 amnesty is negative but insignificant, while the 1997 amnesty tends to have a positive but, again, insignificant effect on revenues. These empirical results are consistent with many other studies that find the effects of amnesties to be neither destructive nor benign, and often insignificant (Alm and Beck, 1993).

CONCLUSIONS

Tax evasion is among the most vexing problems in DTCs. Our motivation for this chapter has been to examine what we have learned from the analyses of tax evasion and what we can apply from these lessons to the problem of tax evasion in DTCs. Our general theme is simple and basic. Institutions matter everywhere, but they are especially decisive in developing and transition countries where their quality is generally lower than in developed countries. Because of the crucial role of such institutions, improving tax compliance in DTCs requires focusing primarily upon improving societal institutions.

We examine first the standard economic model of the individual evasion decision, based on the economic theory of crime. We argue that this basic framework offers some important insights but that it also suffers from some significant limitations, limitations that arise largely because of its failure to incorporate fully or realistically the role of societal institutions in the analytical framework. Put differently, much of the theoretical analyses that economists have produced in the context of developed economies offer limited help in understanding the problem of tax evasion in DTCs. The standard analytical work generally implies that rational individuals should pay far less in taxes than they actually do, and this model performs much better at explaining the change in tax reporting in response to policy innovations than at explaining the level of tax reporting.

Second, we examine the role of some specific societal institutions in explaining tax compliance behavior. One institution is the social norm of compliance. A social norm represents a pattern of behavior that is judged in a similar way by others and that therefore is sustained in part by social approval or disapproval. The existence of social norms suggests that
individuals will comply as long as they believe compliance is the social norm; conversely, if non-compliance becomes pervasive, then the social norm of compliance disappears. To the extent that government policies can affect the social norm of compliance, this provides government with additional means to combat tax evasion. Such government policies include those that work through government institutions (for example, citizen participation and popular support for government programs) and those that reflect the government's explicit commitment to enforcing the tax laws. However, these issues are not fully understood. The investigation of the impact of social norms on compliance behavior is a promising avenue of research for understanding tax evasion in DTCs. There is also a need to improve our understanding of how compliance norms are influenced by government policies, such as the responsiveness of government to its citizens' needs, improved governance, and delivering value for money to taxpayer-citizens.

Another societal institution that affects tax compliance is the administrative machinery of the government tax agency. However, we argue that the traditional 'punishment paradigm' for tax administration, which treats taxpayers as potential criminals and puts exclusive emphasis on repression of illegal behavior, will be only partially effective, especially in DTCs. The newer 'service paradigm' recognizes the role of enforcement but also emphasizes the role of tax administration as a facilitator and a provider of services to taxpayer-citizens. This alternative paradigm is likely to be much more effective in improving the compliance norm in society, in part because it complements the role of social norms in tax compliance; that is, a service paradigm may well enhance the social norm of compliance.

Third, we illustrate the importance of societal institutions for controlling tax evasion in DTCs by three case studies. The experience of Jamaica demonstrates the significant but limited role in DTCs of enforcement strategies exclusively based on higher audit probabilities and penalty rates. The results from Southern Africa strongly support the role of social norms in compliance decisions. The Russian case demonstrates the limited impact of administrative innovations like tax amnesties in a country that lacks both an effective tax administration and a social norm of compliance.

In sum, we believe that societal institutions, such as the social norm of compliance and the presence of an effective tax administration, are critical in order to understand tax compliance issues in DTCs. From a policy viewpoint, it would appear that it may be equally important for DTCs to strengthen the social norms of compliance as to improve and modernize a service-oriented tax administration.

In this regard, recent work by Gould (1996) emphasizes that it is grossly misleading to represent a complex system by a single, so-called
representative agent, who behaves in some average or typical way. Instead, most systems have incredible variety – or a ‘full house’ of individual behaviors – and the proper understanding of any system requires recognition of this basic fact. Indeed, Gould (1996) argues that the way in which a system changes over time is attributable largely to changes in the amount of variation within the system, rather than to changes in some largely meaningless ‘average’ behavior across its individual members.

This lesson is especially apt for tax compliance. People exhibit a remarkable diversity in their behavior. There are individuals who always cheat and those who always comply, some who behave as if they maximize the expected utility of the tax evasion gamble, others who seem to overweight low probabilities, individuals who respond in different ways to changes in their tax burden, some who are at times cooperative and at other times free-riders, and many who seem to be guided by such things as social norms, moral sentiments and tax equity. Any government approach toward tax compliance must address this ‘full house’ of behaviors in devising policies to ensure compliance. Consequently, a government compliance strategy based only on detection and punishment may well be a reasonable starting point for tax administration but not a good ending point. Instead, what is needed is a multi-faceted approach that emphasizes enforcement, but that also emphasizes the much broader range of actual motivations that explain why people pay taxes. As we argue here, social norms can go a long way in explaining the puzzle of tax compliance, and effectively addressing tax evasion in DTCs will require better information on how these norms develop and evolve.

NOTES

1. A major difficulty in analysing evasion is its measurement. See Tanzi (1980) and Schneider and Enste (2000) for discussions and applications of various approaches to measurement, all of which are subject to much imprecision and controversy.
4. The first- and second-order conditions are, respectively:
\[
\frac{\partial E(U(I))}{\partial D} = pt (f-1) U'(\bar{I}_C) - (1-p)t U'(\bar{I}_N) = 0
\]
\[
\frac{\partial^2 E(U(I))}{\partial D^2} = p \{ t (f-1) t U''(\bar{I}_C) + (1-p)t t^2 U''(\bar{I}_N) < 0,
\]
where each prime denotes a derivative.

5. Note that the probability of detection is assumed here to be fixed and random, so that the audit agency is not allowed to use information from the taxpayers’ returns in determining whom to select for audit. It seems obvious that the tax agency can do better in identifying tax evaders if it uses this initial transmission of information from taxpayers than if it simply ignores the information and audits all taxpayers with equal frequency. Various audit schemes that allow the tax agency to adjust its audit selection in light of information provided by the taxpayer have been introduced and analysed. See, for example, Cronshaw and Alm (1995).

6. For example, total differentiation of the first-order condition demonstrates that the impact of a change in the probability of audit on declared income is given by:
\[
\frac{dD}{dp} = \frac{t (f-1) U''(\bar{I}_C) + (1-p)t^2 U''(\bar{I}_N)}{pt^2 (f-1) U''(\bar{I}_C) + (1-p)t^2 U''(\bar{I}_N)}.
\]
Given the second-order conditions (and the obvious requirement that \(f>1\)), the sign of this expression is unambiguously positive. Other comparative statics results are similarly derived.

7. The two standard measures of risk aversion are ‘absolute risk aversion’ \(A(I)\), equal to \(-U''(I)/U'(I)\), and “relative risk aversion” \(R(I)\), or \(-IU''(I)/U'(I)\). It is typically assumed that \(A(I)\) decreases with income, while \(R(I)\) increases with income.

8. For example, it can be shown that a risk-neutral individual will optimally choose to pay taxes equal only to the expected value of the penalty on unreported income. See Alm (2000) for further discussion.

9. For example, if the basic model is expanded by assuming that individuals can simultaneously use two strategies to evade taxes (underreporting income and overstating deductions), then it is no longer possible to predict that increased penalties or probabilities of detection will reduce evasion. See Martinez-Vazquez and Rider (1995).

10. See Cowell (1990), Andreoni et al. (1998) and Alm (2000) for discussions of these many studies. There has also been some work carried out to expand the basic model of individual choice by introducing some aspects of behavior or motivation considered explicitly by other social sciences, such as ‘overweighting’ of low probabilities, ‘reference point’ effects, deviancy, personal and situational characteristics, social contexts and attribution theory. See Smith and Kinsey (1987) and Webley et al. (1991) for discussions and evaluations of many of these alternative theories.

11. This problem with expected utility theory — that it is unable to explain adequately the behavior of many taxpayers — is not limited to its tax compliance incarnation. Such anomalous behavior has frequently been found in many other areas of choice under uncertainty, particularly in those areas that involve low probability—high loss events (such as natural disasters), or in those areas where the decisions of individuals are interdependent and repeated (for example, voluntary public good provision). Machina (1987) documents evidence showing that individuals do not typically behave in ways consistent with expected utility theory.

12. This dilemma can be illustrated more precisely, using the standard model of the individual compliance decision. Suppose that the utility function of the individual is \(I^{(1/\alpha)}/(1-e)\), where the subscript \(i\) refers to the state of the world (\(i=C,N\)) and \(e\) is a measure of the individual’s constant relative risk aversion. Using the definitions of \(I_C\) and \(I_N\), the expected utility maximization can then be solved for the optimum amount of declared income \(D^*\). Now suppose that \(D^*\) is calculated for specific, realistic values of the various parameters. For example, if \(t=0.4, f=2, p=0.02,\) and \(e=1\), then the individual will optimally declare no income. Very large values for relative risk aversion are required to generate compliance consistent with actual country experience. When \(e=3\), declared income is only 14 percent
of true income; when $e=5$, it is still only 44 percent; when $e=10$, it is 71 percent. Risk aversion must exceed 30 for compliance to exceed 90 percent. However, existing field evidence on the coefficient of relative risk aversion suggests that $e$ ranges between 1 and 2. Risk aversion must be abnormally large for behavior to be even roughly comparable to actual observed choices, even in many developing and transition countries with low levels of compliance.

13. There are other concepts that describe the same basic phenomenon as social norms, such as 'psychic cost' (Gordon, 1989), 'tax morale' (Pommerehne et al. 1994), 'moral sentiments' (Erard and Feinstein, 1994), group conformity and social customs' (Myles and Naylor, 1996), and 'intrinsic motivation' (Frey 1997).

14. Some degree of tax evasion exists in every country. However, when does tax evasion become the accepted norm? Practically, nothing is known about the 'critical mass' or the 'tipping point' of tax evasion, where the social norm of tax compliance switches to one of tax evasion. This issue is discussed more fully later.

15. See, for example, Westat, Inc. (1980), Yankelovich et al. (1984), and Harris and Associates, Inc. (1988) for the United States; Vogel (1974) for Sweden; Lewis (1979) for the United Kingdom; and de Juan et al. (1994) for Spain.

16. See also Steenbergen et al. (1992) who model compliance intentions as being a function of 'general tax beliefs' about the fairness of the tax system and also various 'inhibitors' that serve to alter the perception of the acceptability of tax evasion (for example, guilt, social sanctions and legal sanctions).

17. Several of the economists who developed and extended the standard economic model of tax evasion have also examined the issue of the optimal enforcement by the tax administration agency (Sandmo, 1981; Slemrod and Yitzhaki, 1987; Usher, 1986; Kaplow, 1990; Slemrod, 1990). The important themes of this literature are two. First, tax administration and taxpayer compliance costs need to be considered in designing an optimal enforcement policy. Second, changes in tax collections stemming from changes in enforcement may be a poor guide to the optimal level of enforcement because enforcement uses up real resources in the economy while increased collections simply represent a transfer of resources. The rule for optimal tax enforcement should therefore equate the marginal enforcement cost to the marginal increase in welfare caused by the decrease in excess burdens and other costs (including 'anxiety costs') associated with tax evasion. However, with the exception of additional resource cost spent on administration and the additional revenues generated, all costs and benefits of increased tax enforcement are extremely difficult to measure. In this sense, the policy impact of the optimal enforcement literature has been limited for developed economies and especially limited for DTCs.

18. Note that the available evidence from government budgetary information indicates that the budget cost of collecting individual income, business income and sales taxes is generally in excess of 1 percent of the revenues from these taxes, and can sometimes be substantially higher (Sandford, 1995). However, there is little information on how these costs vary with various policy tools. It seems likely that administrative costs change in large and discrete amounts with the scale of collections and that they may also display economies of scale in their collections, but these aspects of the collection cost technology are not known.


20. The exchange rate in 1983 between Jamaican and US dollars was US$1 = J$1.93. At 1983 exchange rates, the 30 percent bracket applied to the first US$3627 of income, and the 57.5 percent bracket began at US$7254. Per capita Jamaican income in 1983 was US$1614.

21. For example, the price of reported income equals $1/(1-t-b)$, where $t$ is the combined income and payroll tax rate and $b$ is the payroll benefit rate; that is, a worker must allocate $1/(1-t-b)$ in gross reported compensation in order to receive one dollar of net reported income. Similarly, the price of allowance income is simply one because allowance income is not taxed by the income or the payroll tax and it is not eligible for payroll benefits. The price of evasion income depends upon whether the worker is audited or not. If the worker is caught evading, then $1/(1-f)$ must be spend on gross compensation to receive one dollar of net evasion income, where $f$ is penalty rate on unpaid taxes; if the worker is not
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caught, the price of evasion income is one. The expected price therefore equals \( p(1/(1-ft)) + (1-p) \), where \( p \) is the probability of detection.

22. Other empirical evidence from other countries is largely consistent with some of these results. For example, estimation results from Dubin and Wilde (1988) suggest that a higher audit rate leads to more compliance, with an estimated reported income–audit rate elasticity ranging from 0.1 to 0.2. Sheffrin and Triest (1992) examine individual survey data, and also find that compliance increases with a greater (perceived) probability of audit.

23. A maintained hypothesis during the experiments was that risk attitudes were the same in the three countries. This was supported by a test of the willingness to bear risk for all participating subjects in the three countries.

24. The experiments in the United States were conducted in three different locations: a historical black university, a large state university, and a large private university.

25. See also Alm et al. (1995) for similar results on the role of social norms, comparing Spanish and US subjects.

26. As stated by Milka Casanegra de Jantscher, an amnesty gives one ‘bread for today, hunger for tomorrow’.

27. The name of the State Tax Service was changed in 1999 to the Ministry of Taxation.

28. This figure excludes contributions to the social extra-budgetary funds, and tax collections at the federal level do not include tax offsets.

29. With the exception of government wage arrears, no published data exist on government budget arrears. Sundberg and Morozov (1999) report that the new budget arrears at the federal level in 1998 were R 24.6 billion and were R 26.4 billion in 1997. At the sub-national level, budget arrears were R 86.2 billion by February 1999. See also Alfandari and Schaffer (1996).

30. Also included are a dummy variable equal to 1 for December collections and 0 otherwise because the month of December in Russia has always been characterized by a strong seasonal increase in collections (and a fall in arrears), and real Gross Domestic Product because the level of economic activity is expected to affect collections of the various taxes.

REFERENCES


