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Developing Countries**

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Societal Institutions and Tax Effort in Developing Countries

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1. Introduction

“Will underdeveloped countries learn to tax?” asked Nicholas Kaldor (1963), forty years ago. Underlying this question is the assumption that if a country wishes to become ‘developed’ it needs to collect in taxes an amount closer to 25-30 percent of GDP than the 10-15 percent found in many developing countries.¹ Kaldor’s answer to his question was essentially that since even the poorest country had sufficient ‘capacity’ in both economic and administrative terms to tax more, whether or not a particular country did so depended primarily on its political institutions. Would developing countries be fortunate enough to have those with political power voluntarily give up at least some of their power to block fiscal reform in exchange for social stability? Or would the ruling groups rather wait (in the spirit of *après moi le deluge*) for the revolutionary upheaval that he considered the only alternative (Kaldor, 1963)?

¹ Kaldor’s contemporary, Sir Arthur Lewis (Martin and Lewis, 1956), a few years earlier had similarly argued that “the government of an under-developed country needs to be able to raise revenue of about 17 to 19 percent of G.N.P...in order to give a not better than average standard of service.”

Most of the elements of the discussion of ‘tax effort’ in developing countries in recent decades are evident in this early discussion:

- Should these countries tax more than they do? Most who have studied this question seem to have assumed, as did Kaldor, that more taxation is just what the doctor ordered.²
- Can they tax more than they do? That is, do they have the ‘capacity’ to collect a relatively larger share of national income in government coffers? Early regression analysis at the IMF launched a flood of empirical studies considering this question, most of which agreed with Kaldor’s conclusion that in economic terms such countries can indeed tax more, that is, that their ‘capacity’ to tax exceeds the ‘effort’ they make to tax that capacity.³ Conceptual underpinning for this emphasis on the importance of capacity in determining tax levels – that is, for assessing tax effort in terms of how much a country taxed relative to its measured capacity – was provided by Hinrichs (1963) and Musgrave (1969), who emphasized the importance of ‘tax handles’ – structural features such as imports which were relatively easy to tap for fiscal purposes.
- Although some literature stresses the limits administrative capacity imposes on taxation in developing countries (Bird, 1989), those who advocate more taxation as an essential ingredient of any lasting solution to underdevelopment have seldom been deterred by such skepticism. Indeed, in a sense they seem right in ignoring this problem since the evidence appears to suggest that, if the political will to tax is there, the administrative way to do so can be found, if not immediately then shortly.⁴
- Indeed, as again Kaldor (1963) explicitly noted, one of the principal lessons that has been learned from tax reform experience around the world is precisely that ‘political will’ is the *sine qua non* of any successful tax reform (Bird, 2003a) and that a country’s tax system reflects its political institutions. In the words of Rodrik et al. (2002) it appears that “Institutions Rule” in this as in other areas of economic development.

² In recent years, however, influenced perhaps by the growing empirical evidence of the ‘costs’ of taxation (as reviewed recently in Bird and Zolt, 2003), more analysts seem to have come to share the early scepticism of Bauer (1955) as to the inherent virtues of channelling a larger share of national resources through the public sector. We do not, however, discuss this important question in the present paper.

³ Tanzi (1987) is a good example of such work: for a sceptical appraisal of what can be learned from such studies, see Bird (1976).

⁴ For example, this is essentially the conclusion drawn in the review by Bird and Casanegra (1992).

The problem thus seems obvious: poor countries need to spend more on public infrastructure, education, and so on, and hence they need to tax more if they want to be less poor. The main reason 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, appear to have a problem in suggesting a viable solution. The emphasis in earlier empirical analysis on ‘supply side’ factors such as the ready availability of (easily taxed) economic activities such as foreign trade and mining remains important in explaining what countries do, but telling a country that wants to raise its tax levels to find oil is not a particularly promising piece of policy advice. Is the recent political economy literature on the importance of institutions more useful in this respect? Are ‘societal institutions’ (Alm and Martinez-Vazquez, 2003a) the key to increasing tax effort? What institutions? Can such institutions be modified to produce more ‘pro-fiscal’ outcomes (assuming for present purposes that this is desirable)? In this paper, we explore some aspects of these broad questions, taking two distinct approaches to them.

In Section 2 we take a sort of ‘case study’ approach to the problem, first sketching the broad experience with tax reform in Latin America and the relatively unsuccessful outcomes – if success is defined in terms of increasing the tax-GDP ratio – of these efforts. Some seem surprised by this lacklustre performance, but, as did Kaldor (1963), we argue that this outcome is only to be expected since the underlying political conditions in these countries have not, for the most part, changed significantly over this period. We further develop this proposition with reference to Mexico’s experience over the past two decades in the appendix to the paper.

In contrast, in Section 3 of the paper we take a quite different approach, examining empirically the determinants of tax levels across a broader sample of developing and transition countries. In doing so, we take into account not only the supply factors (tax handles) but also critical demand factors such as institutions, the size of the shadow economy, wealth inequality and ‘tax morale’ (defined as the intrinsic motivation by citizens to pay taxes, which, it is argued, depends on their attitude toward the state, see, e.g., Frey 1997). If taxpayers perceive that their interests (preferences) are properly represented in political institutions and they receive an increased supply of public goods, their willingness to contribute increases. On the other hand, a state in which corruption is rampant is one in which citizens have little trust in the authority and thus a low incentive to cooperate. In other words, a more encompassing and legitimate state may be an essential precondition for a more adequate tax system in developing countries. Societal institutions in this sense might be seen

as an indicator of the extent to which citizens feel they have a meaningful ‘voice’ in influencing the state. At the same time, however, the level of taxation can also be expected to be related to the availability of what may be called the ‘exit option’⁵ of the so-called ‘shadow economy’. In general, the larger the shadow economy, the lower we would expect tax effort to be.

In very different ways, each of the distinct approaches taken in Sections 2 and 3 points to the same conclusion, as set out briefly in Section 4. A more encompassing and legitimate state is probably an essential precondition for a more adequate tax system in developing countries. While at first glance giving such advice to poor countries seeing to increase their tax ratios may not seem more helpful than telling them to find oil, it is presumably more feasible for people to improve their governing institutions than to rearrange nature’s bounty.⁶

2. The Tax Ratio and Political Equilibrium

Over the last forty years, most Latin American countries found it difficult to achieve a sustainable policy balance in the face of the often conflicting and frequently changing forces, external and internal, economic and political, that most of them have faced. Both the facts that presumably should govern policy in principle and the intellectual fashions that too often seem to govern it in practice have changed markedly over the last few decades in most countries in the region. It is thus not surprising that their tax policies have also changed considerably -- though much less in either in level or in structure than might at first appear.

Taxation in Latin America

The data on taxation in Latin America, partial and in many ways unsatisfactory as they are, suggest several interesting conclusions.⁷

- First, over the last few decades taxes have *not* gone up in Latin America. Some rates have risen, mainly for VAT, but many have declined, mainly for income taxes. Indeed, tax collections as a share of national income have, on average, actually declined a bit. In this sense, the “tax effort” of most Latin American countries has changed little. Latin American countries continue to be below average in terms of the size of their public sectors relative to their levels of per capita income (IDB, 1998).

⁵ Both the ‘exit’ and ‘voice’ options are beautifully set out in Hirschman’s (1971) seminal study.

⁶ We neglect here one obvious alternative way out of this dilemma, namely, military conquest of those more blessed by nature: for a recent exploration of some interesting aspects of this theme, see Teng (2001). We also neglect the obvious fact that many countries rich in natural resources also do not make much tax effort.

⁷ For data, and a fuller discussion, see Bird (2003).

- Secondly, those countries that had relatively high taxes at the end of the 1970s were still above the regional average in the 1990s, just as those that depended more on income than on consumption taxes continued on the whole to do so. To take two small examples, in 1980-82 Guatemala's tax ratio (taxes as a percent of GDP) was 9.8%, of which only 2.8% came from personal income taxes; in 1995-99, the comparable figures were 8.9% and 2.2%. At the other extreme, although Nicaragua's tax ratio rose from 23.6% in 1981-83 to 26.2% in 1995-99, the share of taxes on domestic consumption remained dominant, although declining a bit from 49% to 46%.⁸ Of course, tax *rates* in these countries did not necessarily change in the same way as tax *ratios*: for example, the VAT rate in Nicaragua rose from 6% to 15% over this period.
- Thirdly, although the reality of taxation in Latin America has perhaps changed less than our perception of it, as evidenced by the relative constancy in both tax levels and tax structures across and within countries, many changes *have* taken place in tax policy across this complex region over the last few decades. Economic and political circumstances have changed dramatically at times in some countries, and sometimes tax systems have changed with them, though not always as one might expect.

In a recent analysis of Mexico, Martinez-Vazquez (2001) notes that one of the most striking features of the various major tax changes that have taken place over the decades has been how very little apparent effect they have had on Mexico's tax-GDP ratio, which has remained almost constant. He suggests several possible explanations for this constancy. The reforms in tax structure (1) may have been undermined by unrelated ad hoc measures, or (2) they may have been offset by administrative deterioration, or (3) one or both of the preceding may have occurred less by accident than by intention. Mexico's case is further discussed in the appendix.

Similar relative constancy can be seen in other countries (e.g. Colombia) over the decades despite repeated tax reforms (McLure and Zodrow, 1997).⁹ Such evidence perhaps suggests that a 'good' tax reform – one intended to raise more revenue in a more efficient and equitable fashion, for instance -- may be something like a 'good' seat belt law. That is, if everything else stayed the same, lives would be saved (the tax ratio would increase), but things do not stay the same – some people drive faster when they are belted in, so death rates (tax ratios) show little change. In short, countries may tend to achieve an equilibrium position with

⁸ The figures for the earlier period are from Tanzi (1987); the more recent figures are from Stotsky and WoldeMariam (2002).

⁹ This phenomenon is by no means confined to Latin America, of course: a striking example elsewhere appears to be India where, after a quick rise in the tax ratio following liberalization in the early 1990s, matters seem to be settling back to the lower ratio to which the country had long been accustomed.

respect to the size and nature of their fiscal systems reflecting largely the balance of political forces and institutions, and then stay there until ‘shocked’ to a new equilibrium.

Why So Little Change?

Two alternative explanations are obviously possible. Either, somewhat improbably, ‘supply’ (‘capacity’) factors have altered over the period in such a way as to offset all attempts to raise tax ratios. Or, perhaps more plausibly, ideas as to what the ‘proper’ tax level should be have altered over time. The latter is certainly true to some extent. The two main aims of taxation in the period after the Second World War were clearly, first, to raise revenue – and lots of it -- in order to finance the state as the ‘engine of development’, and, second, to redistribute income and wealth. Since then, as now, income and wealth were markedly unequally distributed in Latin America, the need for redressing the balance through fiscal means seemed obvious to all, and the ability of taxes to do the job was largely unquestioned. Indeed, both these goals – revenue and redistribution – could, it was generally thought, be achieved largely by imposing high effective tax rates on income, essentially because the depressing effects of taxes on investment and saving were considered to be small. Indeed, an extra bonus of high rates was sometimes argued to be that they made it easier to lead balky private investors by the very visible hand of well-designed fiscal incentives into those channels most needed for developmental purposes.

In short, to exaggerate only a bit, the conventional wisdom at the time was essentially that all developing countries needed to do to solve their fiscal problems was to “learn to tax” (Kaldor, 1963), which to most meant to tax in a properly progressive fashion. Views on the appropriate role and structure of taxation began to change in the 1970s and 1980s, however. By 1990, in contrast to the immediate post-war era, most economists and policy-makers alike thought that high tax rates not only discouraged and distorted economic activity but were largely ineffective in redistributing income and wealth. Reflecting this new view, income tax rates on both persons and corporations were cut sharply and are now almost universally in the 20-30% range in Latin America, as elsewhere in the world (Shome, 1999). On the other hand, reflecting – indeed, to some extent leading – world-wide trends, the VAT is now the mainstay of the revenue system in Latin America (Ebrill et al. 2001). Moreover, the decline of taxes on international trade with liberalization and the WTO as well as increased competition for foreign investment have moved international concerns from the bottom to the top of the tax policy action list in many countries. At the same time, in many countries, a new issue has risen to prominence on the fiscal menu as decentralization made the question of

setting up adequate sub-national tax systems an increasing concern, not least in Latin America (IDB, 1997). Even though all these changes do not as yet seem to have had a very marked an effect on the numbers cited earlier, life in the tax policy world in Latin America, as elsewhere, was thus very different in many respects at the beginning of this century than it was in the middle of the last century.

Ideas, Institutions, and Interests

Ideas matter. As Blyth (2002, p. 274) says, "...neither material resources nor the self-interest of agents can dictate...ends or tell agents what future to construct. Ideas do this." Or, in the more colorful words of John Maynard Keynes (1936, pp. 283-84): "practical men, who believe themselves to be quite free from any intellectual influences, are usually the slaves of some defunct economist....soon or late, it is ideas, not vested interests, which are dangerous for good or evil." Ideas about tax policy have clearly changed. Have institutions and interests also changed?

Some years ago, Michael Best (1976) analyzed Central American tax policy in essentially a 'class' framework., arguing that in principle changes in tax level structure (e.g., the degree of emphasis on income taxation) reflected largely the changing political balance of power between landlords, capitalists, workers, and peasants. Shortly after his article appeared, the Sandinista government – perhaps the most explicitly leftist regime ever to have power in the region (apart from Cuba) -- took over in Nicaragua. What happened to taxes? Three things. First, as Best (1976) would have predicted, the tax ratio rose very quickly, from 18 to 32 percent of GDP within the first five years of the Sandinista regime. Secondly, however, almost all the increased tax revenue came from regressive indirect taxes, not the progressive income taxes that one might have expected. Third, and in many ways most interesting, once Nicaragua's tax ratio was increased, it stayed up there even a decade (and three subsequent governments) after the defeat of the Sandinistas.¹⁰

As this example suggests, politics matters in taxation, but it does not necessarily dominate. Economic and administrative realities, and ideas, also matter. The fiscal reality found in most countries probably reflects a changing mixture of ideas, interests, and institutions. The tax structure that exists seldom seems to have been designed with any

¹⁰ Peacock and Wiseman (1967) many years earlier had explained a similar discrete jump in tax effort and public expenditure in Great Britain as a 'displacement effect': general perceptions about what is a tolerable level of taxation tend to be quite stable until these perceptions get shocked by social upheavals, and levels of taxation that would have been previously intolerable become acceptable and remain at that level after the social perturbations have disappeared.

particular objective in mind. On the contrary, it often seems, like Topsy, to ‘have just grown’ in ways shaped by both the changing local environment and the changing external context. In the case of the United States, for example, as Weisman (2002, p. 366) shows, “economic crises and wars helped create a consensus for an income tax that falls most heavily on the wealthiest taxpayers. The consensus [was] forged in the period of 1860 to 1920.....” The lengthy debate about taxes that took place over this period was, he says, not really about taxes at all but rather about “what kind of society Americans wanted.” Since 1970 or so, the ideas on the relevant balance between taxes and society that were forged over the first half of the 20th century seem to many to have changed; the reality, however, has changed much less and is not likely to change all that much in any case. To develop this argument further, we turn to some recent broader historical and comparative analysis.¹¹

Consider two recent analyses of how the western democracies got into the business of big government and fiscal redistribution in the first place. First, Alesina and Angeletos (2003) have recently argued that two distinct ‘models’ of redistributive taxation exist in the developed countries. At one position is the United States, with relatively low taxes and low redistribution. At the other extreme are countries like Sweden, with high taxes and high redistribution. Alesina and Angeletos (2003) attribute the difference essentially to self-fulfilling expectations. In the U.S., or so they argue, the general belief is that effort is causally related to income, so that those who make the effort, and consequently receive the income, are entitled to retain a goodly share of the fruits of their efforts. The resulting relatively unequal distribution of income is seen as a fair outcome since it reflects, so it is believed, differential effort to a considerable degree. On the other hand, since taxes are low so, they say, are tax distortions, with the result that high effort is indeed likely to yield high income, thus fulfilling initial expectations. In some European countries, on the other hand, Alesina and Angeletos (2003) suggest that the pervasive belief appears to be that high income reflects not so much high effort as good connections or even corruption. Since the high taxes resulting from this belief system so distort effort that the connection between high effort and high income is indeed greatly weakened, this belief too, they suggest, is strongly grounded in the prevalent social reality. In this approach, ideas thus take the lead role in shaping fiscal outcomes.

¹¹ One might perhaps question the relevance of historical or even comparative experience in analyzing and understanding the problems of developing countries today. As a recent book notes, however, “Today’s industrialized countries were yesterday’s developing or transitional economies and for tax policy purposes the demarcation line between them is more likely to be the relative efficiency and integrity of the tax administration, rather than such economic criteria as GDP per capita” (Messere et al., 2003, preface). Of course, how a tax administration functions is determined largely by more fundamental political factors.

On the other hand, in his recent work Lindert (2002, 2003) takes a quite different approach to the two distinct equilibrium fiscal states observable in modern democratic societies. His initial observation is the same: In some countries (such as the U.S.), the size of government is relatively low; in others (such as Sweden), it is relatively large. Lindert stresses, however, that the implications of these choices for tax policy are not at all what one might expect: low taxes need not mean low costs of taxation. Indeed, as Steinmo (1993) had earlier stressed, the U.S. actually has more progressive tax policies in many respects than does Sweden, and hence in all likelihood more distortionary taxes. Lindert explains this perhaps surprising result by arguing, in effect, that the larger the government share of economic activity, the more damaging bad tax policy choices can be and hence the more care democratic governments take to avoid such choices. Voters, he says, notice and react to such choices, in part by supporting more pro-growth (and less progressive) tax structures, with, for example, lower effective tax rates on capital income, lower property taxes, and relatively higher taxes on labor income, on consumption, and especially on socially damaging activities (smoking, drinking, environmental damage). Low-budget countries, on the other hand, tend to have higher taxes on capital and lower taxes on wages and consumption, thus placing relatively more of the tax burden on more elastic factor supplies, with consequently more damaging effects on resource allocation and growth.

To some, this perspective – though nicely argued empirically in Lindert (2002, 2003) – may seem a bit far-fetched. Actually, however, it is strikingly similar to the conclusions reached in two recent studies of subnational debt policy in the United States (Inman, 2003) and Canada (Bird and Tassonyi, 2003). Like Lindert (2002), these studies suggest strongly that democratic polities do learn from experience, and do, over time, tend to reward more those parties that follow more prudent economic policies. Those who think that populists who promise immediate delivery of the moon to the voters will invariably win should, it seems, consider more carefully the meaning of Abraham Lincoln’s famous dictum to the effect that one can fool all of the people some of the time and some of the people all of the time, but that one can never fool all of the people all of the time. Economic history appears to tell us that, at least in societies with the error-correction mechanism that we call “democracy”, Lincoln was right, at least to some extent. Or, as Blyth (2002, p. 274) puts essentially the same point: “Political economies ...are ...evolutionary systems populated by agents who learn and apply those lessons in daily practice.”

As Jakee and Turner (2002) note in a somewhat different context, the critical point is to ensure that adequate feedback mechanisms are in place to warn when sustainable limits are being breached. Such mechanisms may take the form of the exit mechanisms favored by economists (as when over-taxed resources flee a jurisdiction) or the voice mechanisms stressed by political scientists (as when governments are changed to carry out more prudent policies), but they must exist. No government is always competent; none is omniscient; not all are always well-intentioned. Mistakes will be made. The key sustainability problem that all societies face is thus how to minimize the severity of such mistakes. In the story that Lindert (2002, 2003) tells, this is done in part by muting the anti-growth aspects of pro-redistribution spending policy by a more pro-growth tax policy and in part by ensuring that redistributive spending policy is itself largely ‘pro-growth’ (e.g. by focusing on developing human capital). Redistributive policies that in themselves might have been unsustainable in the long run because they would impose excessive distortionary costs on resource allocation are thus made sustainable in part by direct measures to reform the tax system to reduce such costs (and to spend in ways that encourage growth).¹²

All this seems rather neat. Still, there are some obvious problems in reconciling the Alesina-Angeletos and Lindert views. For example, how can the U.S. simultaneously both have low taxes (and hence high reward to effort) and high tax rates on more elastic factor supplies (thus less pro-growth policy)? Does this mean that the U.S. has, in effect, adopted low taxes to encourage effort (and growth), but it has done so in so inefficient a way that it may have increased effort – and hence supported the self-fulfilling expectation that more effort and more income are positively correlated – while at the same time it has also discouraged growth owing to the exceptionally inefficient form of its tax system? Obviously, more work is needed to resolve such conundrums – work that, on the whole, seems to require more detailed studies of cross-country comparisons in the Lindert mold, focusing, for example, on meaningful issues such as the differential marginal tax rates applied to (say) male workers between the ages of 25 and 45, and so on. Not only the devil, but a more meaningful approach to the use of comparative international data appears to lie in much more attention to such critical details.

¹² In the story told by Bird and Tassonyi (2003), much the same end is achieved by subjecting governments to constant pressures from both exit (market forces) and voice (elections). Macroeconomic policies (subnational borrowing) that in themselves might have led to an unsustainable situation in the long run thus become sustainable over time by an evolution in both institutions (capital markets) and ideas (political rewards for conservative fiscal measures).

How to Tax More

What does all this mean with respect to increasing tax effort in Latin America, or for that matter in developing countries more generally? Weisman (2002, p.366) concludes with respect to the United States that "...the search for the right balance is an endless process.... The consensus supporting the legitimacy of the income tax is likely to remain undisturbed. But its progressive nature will always be debated as long as we care about reconciling the competing demands of social equity, economic incentives and the need to pay for an expanding government." In Latin America, no real consensus on the 'right balance' appears yet to have been achieved in most countries. The fact that a few developed countries may have, as it were, moved on to a new, less progressive consensus does not imply that it is any less important for Latin America to develop its own viable democratic social consensus on the right balance between equity and efficiency in taxation.

The developed countries have clearly reached different equilibrium positions. Lindert (2003) may be seen in large part as an extended demonstration of the continued viability of the so-called 'welfare state' model in most European countries. Similarly, Messere, de Kam, and Heady (2003) show that there has been essentially no convergence in either tax levels or structures among OECD countries in recent decades, and they argue there is little reason to expect such convergence in the near future. Equally, there is no reason to expect any one balance to be right for all countries developing countries, in Latin America or elsewhere. As always with public policy, no one size fits all. What is right, or at least feasible, in Chile or Brazil, for example, is likely to continue to differ from what may be sustainable in Colombia or Honduras.

What matters is not only how high taxes are (revenue adequacy), but also how the tax level has been chosen, how the taxes are imposed, and how the funds thus raised are used. The historical evidence appears to suggest that it is critical to ensure that the linkage between expenditure and revenue decisions is as clearly established as possible in the budgetary and political process.¹³ As Wicksell (1896) argued over a century ago, allocative decisions in the public sector will be made efficiently only if they are financed efficiently – that is, by benefit taxes, which may be broadly understood in this context as taxes deliberately chosen to finance specific expenditures in the full knowledge of the allocative consequences of both expenditures and taxes. Wicksell further argued that even such good taxes would really only be politically sustainable if the distribution of income and wealth accorded broadly with the

¹³ The discussion here focuses on (non-benefit) taxation. To the extent public expenditures are financed from charges, non-tax revenues, and borrowing, other considerations may come into play but these issues cannot be discussed adequately here.

politically-acceptable “just” distribution of income – which, as Alesina and Angeletos (2003) demonstrate, may be very different in different countries.

In many ways, then, the central question of tax policy is how to make the “wicksellian connection” (Breton, 1996) operational so that good decisions—that is, decisions that, as closely as practically feasible, reflect people’s real preferences—are made on both sides of the budget. The key to good fiscal outcomes lies less in any particular budgetary or financing procedure than in implementing a public finance system that, to the extent possible, links specific expenditure and revenue decisions as transparently as possible. The best that can be done to help the relevant decision-makers make the right decision is thus to ensure that they and all those affected are made as aware as possible of all the relevant consequences. In the end, then, for a country to implement a better tax system – better in the sense of giving the people what they want – it must have a better political system that transmutes citizen preferences into policy decisions as efficiently as possible. “Democracy,” as Churchill reportedly once said, “is the worst form of Government except all those other forms that have been tried from time to time.”¹⁴

Of course, taxation is always and everywhere what has been called a ‘contested concept’ (Sabates and Schneider, 2003). Some pay; some don’t pay. Some pay more than others. Some receive compensating services; some do not. Such matters are, in democratic states, resolved through political channels. Indeed, history suggests that the need to secure an adequate degree of consensus from the taxed is one of the principal ways in which, over the centuries, democratic institutions have spread. No non-dictatorial government in this age of information and mobility can long stay in power without securing a certain degree of consent from the populace, not least in the area of taxation. State legitimacy thus rests to a considerable extent on citizens’ ‘quasi-voluntary compliance’ (Levi, 1988) with respect to taxation. To secure such compliance, tax systems must, over time, in some sense represent the basic values of at least a minimum supporting coalition of the population.

No matter how good its political institutions, however, any country will always encounter difficulties in dealing with distributive issues. How one thinks about taxes and inequality largely reflects one’s ideas of fairness or social justice, and different people invariably have different beliefs about what is fair – beliefs that may, or may not, have some objective basis. People may have different beliefs for many reasons: because they do not know the truth, because no one knows the truth, because they have been misled about the truth

¹⁴ As Lindert (2004) shows, this quotation actually had a somewhat different implication in its original context, but it is nonetheless largely right if one is concerned with growth: as Lindert (2004, p.344), concludes, history tells us that “the average democracy has been better for economic growth than the average autocracy....”

(for example, by the rich who are against redistribution), or just because they see things differently. Successful politicians are those who can manage such conflicts, and one way to do so, as discussed earlier, is by making the wicksellian connection as plausible as possible to most people. Unless this is done satisfactorily, the long-term political sustainability of any tax system remains questionable.

Latin America Revisited

To return again to Latin America, the central social and economic problem in many Latin American countries is clearly inequality (de Ferranti et al., 2004). On the other hand, the key, and related, governance problem is lack of accountability. A good tax system is critical to the solution of both problems. Reforms that link taxes and benefits more tightly for example, such as decentralization and more reliance on user charges may help accountability. The most important function of the tax system in most countries, however, is simply to provide (non-inflationary) funding for pro-poor and pro-growth spending programs particularly in improving human capital, and the best way to do so is probably through a broad-based non-distortionary consumption tax, as has long been recognized. It is of course easy to think of ways to tax the rich more effectively, and there are certainly good reasons to do so in many countries in which many assets of the wealthy are underutilized and many incomes of the rich may reflect rents secured through political connections or monopolies. Nonetheless, as IDB (1998) stresses, attempts to impose unduly redistributive taxes may backfire, so that countries end up with public sectors that are both smaller and less redistributive.¹⁵

What is actually done with respect to any of these matters will of course be determined in the political arena. Countries vary enormously in the effectiveness and nature of their political systems. Some may be close to ‘failed states’ in which institutions are so ineffective that it does not matter much what they attempt to do. It will not work. Others may be ‘developmentalist’ (as in the early CEPAL model) and want to use their fiscal systems largely as interventionist instruments. Still others may be of a more laissez-faire disposition. Some may be more populist, some more elitist, some more predatory.

The dominant policy *ideas* in different countries – about equity and fairness, efficiency, and growth – like the dominant economic and social *interests* – capital, labor, regional, ethnic, rich, poor -- and the key *institutions* – political (democracy, decentralization,

¹⁵ In any case, as Harberger (2003) shows, even the most redistributive tax will not in itself have any much effect on income redistribution.

budgetary) and economic (free trade, protectionism, macroeconomic policy, market structure) – all interact in the formulation and implementation of tax policy. This changing interplay of ideas, interests, and institutions over time affects the level of taxation, the structure of taxation, and many of its critical details such as the progressivity of rates.

Indeed, taxation is probably one of the clearest arenas in which to witness the working out of these complex forces. Suppose, for example, that both the public at large and the elite want changes, for different reasons. The elite, which even in a democracy can manipulate the state to a considerable extent, may use the public concern as ‘cover’ to achieve its own ends. Consider, for instance, the sad story of property taxation. Once seen as the bulwark of local democracy and accountability, this tax has, over time, come to be considered by the public in the U.S. to be regressive and unfair (Youngman, 2002), thus fostering elite interests in lowering the tax burden on an asset base they disproportionately control. The spillover of anti-property tax rhetoric into more unequal societies to the south has made it even more difficult to institute not only the kinds of specific land taxes that might in principle contribute to land reform (Dorner, 1992)¹⁶, but even the low-rate effective property taxes needed to finance local governments. There remains, of course, a great deal that we do not understand about these complex matters. What seems clear from the work done to date on the political economy of taxation, however, is that while taxes definitely matter in both economic and political terms, they are more driven by, than drivers of, social and economic conditions.

Viewed from this perspective, Latin America and indeed much of the developing world has yet to experience even the earlier parts of the cycle that produced the (more or less) redistributive and (more or less) growth-facilitating fiscal states now found in developed countries – the long preparatory period during which the idea of the desirability, and even necessity, of a larger fiscal system becomes established. Instead, bypassing as it were this ‘egalitarian’ period, some countries in Latin America seem to have moved directly from the feudal inequality of land-based maldistribution to the modern era of capital-based maldistribution. Doreen Warriner (1969) once said, despairingly, that Latin Americans did not seem to know what a good land reform means – probably because they had never seen one. Equally, one might perhaps speculate that, in most countries of the region, as Engerman and Sokoloff (2001) almost – but not quite -- say, most people do not really know what moderate or justifiable inequality might mean, since they have never seen it.

¹⁶ Although one might rightly be skeptical about the effectiveness of such measures (Bird, 1974).

Governments in many Latin American countries are in dire straits. Even those who have reached relatively safe harbors politically, and have a certain degree of legitimacy and stability, almost always feel – often correctly – that they are in an economically precarious situation. The budget is politically and economically constrained. Life is difficult. Nothing can be done. All this may be true to some extent, but it is also both too much a counsel of despair and too easy a way out. Even in the most hopeless situations, something usually can be done to improve matters. No doubt there will be much dispute over what should be done to improve tax systems. Unless and until an adequate degree of political consensus on what should be done is achieved, however, no significant tax changes are likely to be made.

As Lledo, Schneider, and Moore (2003, p. 47) stress, much of the problem in Latin America is that most countries lack “...an (implicit) social contract between governments and the general populace of the kind that is embedded in taxation and fiscal principles and practices in politically more stable parts of the world.” What needs to be added to this bleak but accurate assessment is that history tells us that such principles generally do not become embedded either painlessly or quickly. The specific substantive suggestions that Lledo, Schneider, and Moore (2003) make to improve matters – more use of income taxes, better VAT administration on a broader base, more attention to subnational taxation, more attention to informal activities and environmental aspects of taxation, closer ties to expenditure policy, and so on -- are of course already the stuff of countless existing reports. Who can argue?

The real question is, why has so little been done? From this perspective, by far the most important conclusion of Lledo, Schneider, and Moore. (2003) -- which is also in many ways the main point of the present section -- is their final recommendation “to improve political institutions in ways that enhance legitimacy and capacity.” In other words, there can, so to speak, be no good taxation without good representation. The trouble with this truism is that history suggests that all too many countries have proved unable to achieve either good taxation or good representation without first going through a period of bad taxation which, in Hegelian fashion, called forth forces that in the end improved both representation and taxation. If this sense perhaps, Latin Americans and those in many developing countries around the world are luckier than they think, since they have a lot of bad taxation with which to begin.

3. The Role of Societal Institutions: Cross Country Statistical Evidence

In Section 2, we argued that how much any society collects in taxes to a considerable extent reflects what we called its ‘political equilibrium’ and that its level of tax effort was not

likely to change drastically unless the underlying forces determining that equilibrium level also changed. In this section probe more deeply into the conditions under which tax effort can be increased by examining empirically the determinants of tax effort across a broad sample of developing and transition countries. We take into account not only ‘supply factors’ (tax handles) but also critical ‘demand factors’ such as societal institutions like governance and corruption, and ‘framing’ institutions such as the size of the shadow economy, inequalities in the distribution of income and ‘tax morale.’ Our basic working hypothesis is that supply factors matter but that in order to explain international differences in tax ratios we also need to take into account demand factors. In econometric terms, our hypothesis implies that the group of variables representing the role of societal institutions is statistically different from zero. That is, the tax level in any country does not just depend on the ability of its tax administration to collect taxes from the available ‘tax handles.’ If taxpayers perceive that their interests (preferences) are properly represented in political institutions and consider government to be not wasteful but helpful, their willingness to vote for higher levels of taxation and comply with their tax obligations will increase. ‘Societal institutions’ are used here as an indicator of the extent to which citizens feel they have a meaningful ‘voice’ in influencing the state. In general, the greater ‘voice,’ the higher we would expect tax effort to be. At the same time, the larger the shadow economy -- the ‘exit option’ -- the lower we would expect tax effort to be. An important contribution of this paper is thus to extend the basic tax effort model by establishing the extent to which *institutions matter*.

A. The Basic Model: Tax Handles and Determinants

We begin by re-examining the role of the traditional supply side variables of the tax effort literature. (An overview and summary of this literature is provided in Annex Table 1.) In general, this literature posits the following equation:

$$TE = f(Y, POP, XM, NAGR) \tag{1}$$

where,

TE: Tax effort

Y: GDP per capita (measured in \$US)

POP: rate of population growth

XM: ratio of exports plus imports to GDP

NAGR: non agriculture share of GDP

We measure the dependent variable (Tax Effort) in two different ways: (a) tax revenue as a share of gross domestic product (GDP) -- the traditional measure in the literature -- and (b) current revenues/GDP (excluding grants). Current revenue includes all revenue to the central government from taxes and non-repayable receipts (other than grants), measured as a share of GDP.¹⁷ We call the second measure revenue effort, reserving the label of tax effort for the first measure. The use of the two measures of dependent variable provides for a more robust testing of the model, given different practices and possible mistakes in revenue classification in developing and transitional countries. Data for both measures of the dependent variable comes from the World Development Indicators (WDI) for 2003. Descriptive statistics for the two dependent variables are shown in Annex Table 2. The two measures are highly correlated ($r=0.84$, statistically significant at the 0.01 level). The model is estimated using cross-section data with mean values for the years 1990 to 1999 for 108 developing and transitional countries.¹⁸ (Data sources and the description of all variables are summarized in Annex Table 3).

The explanatory variables employed in the basic model follow those used in the conventional tax effort literature. Per capita GDP is a proxy for the level of development of a country. A higher level of development goes together with a higher capacity to pay and collect taxes, as well as a higher relative demand for income elastic public goods and services (Chelliah, 1971; Bahl, 1971). In general, we would expect a positive relation between the level of per capita income and the level of tax effort.

Demographic characteristics may also be an important determinant of tax effort. As Bahl (2003, p. 13) points out, in countries with faster growing populations tax systems may lag behind in the ability to capture new taxpayers. This suggests that the rate of population growth is negatively related to the level of tax effort.

The most traditional explanatory variables in the conventional tax effort literature are those controlling for a country's economic structure. These variables reflect the idea that the availability of 'tax handles' should influence the level of tax effort. For example, trade taxes are often a major source of government revenues in less developed countries because they are easier to collect than income taxes. We measure the availability of this tax handle by openness, defined as the sum of exports and imports as a share of GDP. The tax ratio is expected to be positively related to the degree of openness of the economy.

¹⁷ Note that since only central government data are recorded in this source, the tax level may be understated especially in countries in which subnational governments are important.

¹⁸ The use of average values over a period allows to maximize the number of observations.

The sectoral composition of domestic product may also affect the ability to tax. A traditional measure signaling the difficulty to tax domestic output is the share of agriculture in GDP. Some argue that the agricultural sector is not much more difficult to tax (Bahl 2003), but the larger its relative importance in a country's economy the lower the need to spend on governmental activities and services, as many public sector activities are city-based (Tanzi 1992). In addition, political reasons some countries exempt from taxes a large share of agricultural activities. A higher non-agriculture share in GDP should thus produce a higher tax ratio. .

Table 1 contains our results for the conventional model. Practically all estimated coefficients for the explanatory variables are in line with predictions for both measures of the dependent variable and largely coincide with previous findings in the literature. A faster rate of population growth leads to a lower tax ratio. Openness of the economy has a positive effect on tax effort, and a higher share of non-agricultural sectors in GDP is correlated with a higher tax effort. Although the coefficient for GDP per capita has the predicted sign, it is not statistically significant in either equation, again in line with previous studies (see Annex Table 1).¹⁹ .

¹⁹ We explored the possibility of a non-linear relationship between GDP per capita and tax effort by adding the square of GDP per capita to the equation. However, the coefficient for the new term was generally not significant.

Table 1: The Traditional Determinants of Tax Effort

Model	OLS		OLS		OLS		OLS	
<i>Dependent Variables</i>	<i>Tax Effort</i>		<i>Revenue Effort</i>		<i>Tax Effort</i>		<i>Revenue Effort</i>	
	Eq. 1a		Eq. 1b		Eq. 3a		Eq. 3b	
Independent Variables	Coeff.	t-Stat.	Coeff.	t-Stat.	Coeff.	t-Stat.	Coeff.	t-Stat.
a) DEVELOPMENT								
GDP PER CAPITA	-0.1E-03	-0.51	0.1E-03	0.42	-0.001***	-3.14	-0.001***	-2.30
POPULATION GROWTH	-2.899***	-4.40	-2.371***	-3.33	-2.731***	-4.86	-2.027***	-3.34
b) OPENNESS								
(EXPORT + IMPORT)/GDP	0.058***	3.10	0.079***	3.73	0.061***	4.02	0.075***	4.75
c) ECONOMIC STRUCTURE								
1 - AGRICULTURE/GDP					0.260***	5.26	0.331***	5.29
Observations	107		107		103		103	
Prob > F	0.000		0.000		0.000		0.000	
R-squared	0.286		0.282		0.453		0.460	

Notes: The dependent variables are: TAX EFFORT: tax revenues/GDP, TAX REVENUE: current revenues/GDP. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Regressions with robust standard errors.

B. The Extended Model: The Role of Societal Institutions

The traditional literature on tax effort has ignored the role of demand factors such as societal institutions in explaining relative revenue performance.. As noted above, our basic working hypothesis is that while supply factors clearly matter in order to explain international experience we also need to account for how citizen attitudes to both their voice and exit options. We thus extend the “basic tax effort model” as:

$$TE = f(Y, POP, XM, NAGR, INSTIT) \quad (2)$$

where *INSTIT* is a vector of variables representing “demand factors” or societal institutions. Empirically, the additional exploratory variables we use can be grouped as follows:

Quality of Governance Index (see Kaufmann, Kraay, and Mastruzzi (KKM), 2003)

This index reports the mean value of six governance dimensions for the periods 1996, 1998 and 2000. It is based on several hundred variables measuring perceptions of governance and derived from 25 different data sources. KKM (2003) classify the six governance indicators into three groups as follows:

- 1) Process by which governments are selected, monitored and replaced
 - VOICE AND ACCOUNTABILITY: measures the political process, civil liberties, and political rights
 - POLITICAL STABILITY AND ABSENCE OF VIOLENCE: measures perceptions of the likelihood that the government will be destabilized/overthrown)
- 2) Capacity of the government effectively to formulate and implement sound policies
 - GOVERNMENT EFFECTIVENESS (inputs required for the government to be able to produce and implement good policies and deliver public goods)
 - REGULATORY QUALITY (focuses more on policies, such as incidence of market/unfriendly policies, perceptions of the burdens imposed by excessive regulation)
- 3) Respect of citizens and the state for the institutions that govern economic and social interactions
 - RULE OF LAW (several indicators measuring the degree of agents' confidence in and compliance with the rules of society). According to KKM. (2003, p.4) these indicators "measure the success of a society in developing an environment in which fair and predictable rules form the basis of economic and social interactions"
 - CONTROL OF CORRUPTION: measures the perceived corruption (exercise of public power for private gain).

All scores estimated by KKM (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 several combinations of sub-indexes.

International Country Risk Guide (ICRG) (see Knack 1999)

The ICRG provides an alternative set of data to the Quality of Governance Index, with special emphasis on aspects affecting private foreign investment decisions. The data contain annual values for indicators of the quality of governance, 1982-1997, constructed by Stephen

Knack and the IRIS Center, University of Maryland and provided by The PRS Group. Our interest is in the Political Risk Components of the ICGR. We derive an index (mean values) based on a selection of the following components from the Political Risk Components: CORRUPTION IN THE GOVERNMENT,²⁰ RULE OF LAW (“LAW AND ORDER TRADITION”),²¹ BUREAUCRATIC QUALITY,²² ETHNIC TENSION,²³ REPUDIATION OF GOVERNMENT CONTRACTS,²⁴ EXPROPRIATION RISK.²⁵ A higher number of points indicates a lower potential risk. Most values range between 1 and 6 (exceptions: EXPROPRIATION RISK and REPUDIATION OF GOVERNMENT CONTRACTS which range between 1 and 10).

These two variables, the *ICRG Index* and the *Quality of Governance Index* capture some of the ‘voice’ institutions and, more generally, the quality of the responsiveness of government to citizens’ demands. Because of the high correlation (0.74) between the *ICRG* and the *Quality of Governance* variables, we use these two sets of variables in alternate estimations.²⁶

²⁰ Lower scores indicate "high government officials are likely to demand special payments" and that "illegal payments are generally expected throughout lower levels of government" in the form of "bribes connected with import and export licenses, exchange controls, tax assessment, police protection, or loans."

²¹ This variable "reflects the degree to which the citizens of a country are willing to accept the established institutions to make and implement laws and adjudicate disputes." Higher scores indicate: "sound political institutions, a strong court system, and provisions for an orderly succession of power." Lower scores indicate: "a tradition of depending on physical force or illegal means to settle claims." Upon changes in government new leaders "may be less likely to accept the obligations of the previous regime."

²² High scores indicate "an established mechanism for recruitment and training," "autonomy from political pressure," and "strength and expertise to govern without drastic changes in policy or interruptions in government services" when governments change."

²³ This variable "measures the degree of tension within a country attributable to racial, nationality, or language divisions. Lower ratings are given to countries where racial and nationality tensions are high because opposing groups are intolerant and unwilling to compromise. Higher ratings are given to countries where tensions are minimal, even though such differences may still exist."

²⁴ "This indicator addresses the possibility that foreign businesses, contractors, and consultants face the risk of a modification in a contract taking the form of a repudiation, postponement, or scaling down" due to "an income drop, budget cutbacks, indigenization pressure, a change in government, or a change in government economic and social priorities." Lower scores signify "a greater likelihood that a country will modify or repudiate a contract with a foreign business."

²⁵ This variable evaluates the risk "outright confiscation and forced nationalization" of property. Lower ratings "are given to countries where expropriation of private foreign investment is a likely event" (see data description p. 2).

²⁶ There is no fixed rule on how highly correlated two variables have to be before multicollinearity becomes a problem. For example, Allison (1999) points out that values above 0.80 almost certainly are problematic, but there may be difficulties that appear below that value. Because the two sets of variables practically measure the same institutions and we are not testing hypotheses about any specific variable, we find it simpler to use them as alternate measures.

Tax Morale and the Shadow Economy

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 supplied with public goods, their willingness to contribute increases. Identification with the state increases, and thus the willingness to pay taxes rises. We hypothesize that a lower degree of tax morale, defined as the intrinsic motivation to pay taxes, reduces the tax effort in a country. The level of tax effort is also expected to be strongly connected to the ‘exit option’ -- the decision to conduct, fully or partially, economic activity in the informal sector (the shadow economy). The more taxpayers believe that others work in the shadow economy, the lower the moral costs to them to behave dishonestly and evade taxes by moving their own activities to the shadow economy. In this way the potential intrinsic motivation to comply and contribute to public sector activities gets crowded out. Thus, we hypothesize that a larger shadow economy should lead to a lower level of tax effort. Measures of tax morale and the shadow economy also tend to be highly correlated. Several previous studies have shown that low tax morale might be responsible for the rise of shadow economy (see, e.g., Torgler, 2001, 2004; Alm and Torgler, 2004; Alm, Martinez-Vazquez and Torgler, 2004). For these reasons, tax morale and the shadow economy are employed as alternate measures of the “exit option” in the empirical analysis.

The size of the shadow economy is measured as a percentage of official GDP, using data from Schneider and Klinglmair (2003). In line with the observations for the dependent variables, we take the average values for 1990, 1995, and 1999.²⁷

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 (see European Values Study, 1999). 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 more than 40 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:

²⁷ See also Schneider and Enste (2002) for a description of the methodologies used in the estimation of the shadow economy.

World 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).”

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.²⁸ Both surveys cover the period 1990 to 1999.

Inequality

As discussed in Section 2, inequality in the distribution of wealth and income is strongly connected with public views as to how well the fiscal system addresses social objectives with respect to fairness, social justice and redistribution. If a perceived unfair distribution of tax burdens is thought to be one cause of income inequality, the result may be to lower the level of trust in institutions and eventually to lower tax effort because of widespread tax avoidance and evasion. Highly unequal distributions of income, as in many Latin American countries, can also lead to low levels of solidarity by the elites toward lower income groups (their needs for public services). Low levels of tax effort in Central America, for example, are often interpreted as the result of the unwillingness of the richest small percentage of the population to pay more in taxes to provide public services for the masses since the elite can provide their own ‘public services’ privately, ranging from public safety to education and even roads. Furthermore, income inequality may be associated with political instability. For example, less privileged groups may choose to use undemocratic instruments to improve their situation (Alesina and Perotti 1996). On the other hand, privileged groups may try to maintain their position by illegal means. In summary, more unequal distributions

²⁸ Of the two surveys, the World Values Survey provides more observations. On the other hand, the *Latinobarómetro* allows us to include more Latin American countries in the empirical analysis. However, we must note that the tax morale questions are not identical. Eight Latin American countries (Argentina, Brazil, Chile, Colombia, Mexico, Peru, Uruguay and Venezuela) are available in both data sets. To judge from the average values for the two measures in the two data sets (WVS, 2.215 and *Latinobarómetro*, 2.113), the variables are almost identical. However, in order to maximize the number of observations, we work with the World Values Survey, which allows us to include other developing and transition countries. The average values for Latin American countries, which can only be constructed from the *Latinobarómetro*, are multiplied by the factor (2.215/2.113) to address some scaling effects. This approach allows us to include a larger number of Latin American countries in the analysis.

of income and wealth are likely to enhance the exit option for all types of taxpayers. We hypothesize that higher inequality leads to lower levels of tax effort.

To measure the variable income inequality we use the newest available data set, ESTIMATED HOUSEHOLD INCOME INEQUALITY (EHII), constructed by Galbraith and Kum (2003). This data set combines the information in the Deininger and Squire (1996) and UTIP-UNIDO (average 1990-1999) data sets.²⁹

Fiscal Decentralization

The level of tax effort may also depend on the vertical structure of government, and in particular on the level of fiscal decentralization. Several mechanisms (with opposing impacts) may lead fiscal decentralization to influence tax effort. First, a more decentralized system of government tends to be more responsive and can better meet taxpayers' needs and preferences (Oates 1972). A more efficient and responsive government at all levels may result in an increased willingness to contribute and also in an increased demand for public spending and higher voluntary levels of tax effort. On the other hand, a more decentralized system of government imposes more restrictions on the ability of government to act as a Leviathan exploiting tax bases and increasing public spending since taxpayers may select jurisdictions with lower levels of expenditures and taxes and jurisdictions may compete among themselves to keep taxes and expenditures low (Brennan and Buchanan, 1980). There is some empirical cross-country evidence that higher levels of decentralization lead to lower levels of public expenditure (Arze, Martinez-Vazquez, and McNab, 2004.) Furthermore, decentralization may encourage governments to rely more on user charges and fees and less on taxes, so that consumers are more likely to be confronted with the marginal costs of public service delivery (Feld, Kirchgässner and Schaltegger 2003), and such charges and fees may not be recorded as government tax revenues. A greater level of decentralization and autonomy at the local level may thus lead to lower levels of tax effort although this prediction is not unambiguous.

Before we estimate the extended model including the demand side, several other considerations should be mentioned. First, the similarity of some of the explanatory variables and multicollinearity does not allow us to run full specifications including all the potential institutional explanatory variables identified above. Our approach is therefore to run a series of estimations in which some institutional variables are replaced by others, usually from

²⁹ Galbraith and Kum (2003) estimate gross household income inequality from a regression between the Deininger and Squire (1996) inequality measures and the UTIP-UNIDO pay inequality measures.

different data sources. One advantage of this approach is that it permits us to check the robustness of the estimated effect of institutions on tax and revenue ratios..

Second, some of the institutional variables may be endogenous. For example, better institutions may lead to better tax performances, but in turn, poor tax performance can reduce the possibilities of establishing or maintaining well functioning institutions in developing and transition countries. To check for the presence of endogeneity, we conduct for each estimation a Hausman Chi-square test. In those cases where exogeneity cannot be rejected, we use a 2SLS approach, as indicated in the tables showing the results.³⁰

As data for the institutional variables are derived from different sources, we first present estimations focusing on different institutional factors independently. This approach allows us to look at results for the different variables when we are able to maximize the number of observations. Subsequently, we present the results for fuller specifications. The fuller specification has the obvious advantage of presenting a more balanced view of the role of different institutions (separating the effects of the independent variables) but it has the disadvantage at this stage that the number of observations we can utilize is smaller, perhaps resulting in other types of biases.

The empirical results presented in *Tables 2 to 6* suggest strongly that institutions play a significant role in the determination of the level of tax effort of developing and transition countries. Demand factors thus matter, though the conventional supply factors continue to play a robust and significant role throughout the estimations.

The role of ‘voice’ institutions as measured by the Quality of Governance and the ICRG variables is explored in *Tables 2 and 3* respectively. The main indexes and all sub-indexes have coefficients with the expected sign and are highly significant. Among the selected sub-indexes, corruption and the rule of law seem to play key roles in explaining the level of tax effort. These results give support to the hypothesis that societies’ willingness to tax themselves depends on the perception that government institutions are honest and responsive and that there is a fair and predictable public sector environment.

³⁰ In general, as Kaufmann et al. (2002) point out, the choice of an estimator in a small sample situation is still an econometric puzzle in the literature as, for example, OLS estimators are often found to be close to an instrumental variable technique in many empirical studies. An important problem is that 2SLS produce biased estimators in small samples (see also Green 2000). The choice of adequate instruments for institutions is not extensively addressed in the literature (for corruption see, e.g., Kaufmann, Kraay and Zoido-Lobaton 1999, Bai and Wei 2000, Kaufmann, Mehrez and Gurgur 2002). More recent studies stress the relevance of considering historical and geographic features of the countries as instrumental variables as they influence the outcome through their impact on the institutional and political environment (see, e.g., Hall and Jones 1999, and Acemoglu et al. 2001). Recent studies such as the ones of Alesina et al. (2002) or La Porta et al. (1999) offer a broad data set to consider factors such as latitude, ethnic fractionalization, language, religion. Taking into consideration that the instruments need to be highly correlated with the regressor for which it is acting as an instrument, our data set indicates that historical and geographic variables perform very well as instruments.

The role of 'exit' variables is explored in Table 4 for income inequality, Table 5 for the size of the shadow economy, and Table 6 for tax morale. In most cases, these variables take the expected sign and are statistically significant. Where disparities in the distribution of income are larger, or the size of the shadow economy is bigger, or tax morale is lower, countries tend to show a lower tax effort.

The results with the full specifications are shown in Table 7 (using the shadow economy as the exit variable) and in Table 8 (using tax morale as the exit variable.) These results show that both supply (tax handles) and demand variables (institutions) play a significant role in the determination of tax effort.³¹ Among the demand side variables, income inequality and the voice variables *Quality of Governance* and *ICRG* indexes, take the expected sign and are statistically significant. On the other hand, the exit variables measured by the shadow economy and tax morale perform less well. Although in some cases their coefficients take the right sign and are significant, more often they are statistically insignificant. Thus, it would seem that, overall, voice institutions together with inequality in the distribution of income play a stronger role in the level of tax effort. However, one should be cautious in concluding that exit institutions have only a small effect. For example, exit institutions may mediate the effect of voice institutions in developing countries. Alternatively, causality may run the other way, from voice to exit.³² The lack of significance of the tax morale variable in *Table 9* may also be partly due to the low number of degrees of freedom.

³¹ We also ran the full specifications with fiscal decentralization as an additional explanatory variable. The results consistently showed the decentralization coefficient to be negative, indicating that more decentralized systems may exert lower tax effort, but the coefficients were never statistically significant.

³² It is difficult to get a clear notion of the causal links among these variables. In most developed countries, for instance, given that good governance and other institutions providing voice have been stable for many years, it might be that if any causality links exists, it may run from voice institutions to exit institutions such as tax morale or the shadow economy, and not the other way round.

Table 2: The Effects of Institutions on Tax/Revenue Effort (Quality of Governance)

Model	OLS		OLS		OLS		OLS		OLS		OLS		OLS							
Dependent Variables	Tax Effort		Revenue Effort		Tax Effort		Revenue Effort		Tax Effort		Revenue Effort		Tax Effort							
Independent Variables	Coeff.	t-Stat.	Coeff.	t-Stat.	Coeff.	t-Stat.	Coeff.	t-Stat.	Coeff.	t-Stat.	Coeff.	t-Stat.	Coeff.	t-Stat.						
a) DEVELOPMENT																				
GDP PER CAPITA	-0.001***	-3.85	-0.001***	-2.68	-0.001***	-3.65	-0.001**	-2.32	-0.001***	-3.68	-0.001***	-2.81	-0.001***	-4.00	-0.001***	-3.18	-0.001***	-4.29	-0.001***	-3.77
POPULATION GROWTH	-2.556***	-4.57	-1.850***	-3.00	-2.229***	-3.56	-1.868**	-2.59	-2.473***	-4.22	-1.684***	-2.56	-2.757***	-5.00	-2.020***	-3.54	-2.730***	-5.07	-1.987***	-3.64
b) OPENNESS																				
(EXPORT + IMPORT)/GDP	0.053***	3.61	0.068***	4.21	0.061***	4.24	0.075***	4.75	0.050***	3.39	0.061***	3.92	0.053***	3.52	0.066***	4.13	0.049***	3.37	0.061***	3.91
c) ECONOMIC STRUCTURE																				
1 - AGRICULTURE/GDP	0.199***	3.40	0.276***	4.40	0.192***	3.29	0.309***	4.75	0.230***	4.10	0.293***	4.84	0.211***	4.19	0.272***	4.73	0.218***	4.13	0.279***	4.97
d) INSTITUTIONS																				
INDEX GOVERNANCE	3.790**	2.19	3.350*	1.79																
VOICE AND ACCOUNT.					2.638**	2.30	0.868	0.74												
POLITICAL STABILITY									2.240**	2.00	2.865**	2.54								
RULE OF LAW													3.639**	2.52	4.298**	2.52				
CONTROL OF CORRUPTION																	4.526***	2.85	5.447***	3.35
Observations	102		102		102		102		102		102		102		102		102		102	
Prob > F	0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000	
R-squared	0.497		0.485		0.499		0.464		0.500		0.511		0.496		0.503		0.515		0.528	

Notes: The dependent variables are: TAX EFFORT: tax revenues/GDP, REVENUE EFFORT: current revenues/GDP. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Regressions with robust standard errors. Hausman Chi-square tests fail to detect the presence of simultaneity of the TAX/REVENUE EFFORT and INSTITUTIONS. Thus, only OLS has been estimated. Instrumental variables: voice: ethnic fractionalization, language, catholic; political stability: language, latitude; rule of law: ethnic, language; control of corruption: ethnic, language; index governance: ethnic, language.

Table 3: The Effects of Institutions on Tax/Revenue Effort (ICRG)

Model	<i>OLS</i> <i>Tax Effort</i>		<i>OLS</i> <i>Revenue Effort</i>		<i>OLS</i> <i>Tax Effort</i>		<i>OLS</i> <i>Revenue Effort</i>		<i>OLS</i> <i>Tax Effort</i>		<i>OLS</i> <i>Revenue Effort</i>		<i>OLS</i> <i>Tax Effort</i>		<i>OLS</i> <i>Revenue Effort</i>	
<i>Dependent Variables</i>	<i>Coeff.</i>	<i>t-Stat.</i>	<i>Coeff.</i>	<i>t-Stat.</i>	<i>Coeff.</i>	<i>t-Stat.</i>	<i>Coeff.</i>	<i>t-Stat.</i>	<i>Coeff.</i>	<i>t-Stat.</i>	<i>Coeff.</i>	<i>t-Stat.</i>	<i>Coeff.</i>	<i>t-Stat.</i>	<i>Coeff.</i>	<i>t-Stat.</i>
a) DEVELOPMENT																
GDP PER CAPITA	-0.001***	-5.00	-0.001***	-3.59	-0.001***	-4.44	-0.001***	-3.80	-0.001***	-4.39	-0.001***	-3.69	-0.001***	-3.89	-0.001***	-3.61
POPULATION GROWTH	-2.053***	-2.81	-1.972**	-2.35	-2.354***	-3.05	-1.897**	-2.36	-2.892***	-4.49	-2.793***	-4.03	-2.936***	-3.99	-2.740***	-3.66
b) OPENNESS																
(EXPORT + IMPORT)/GDP	0.045***	3.26	0.072***	4.50	0.041***	2.92	0.061***	4.07	0.052***	4.12	0.081***	5.49	0.063***	4.49	0.088***	5.42
c) ECONOMIC STRUCTURE																
1 - AGRICULTURE/GDP	0.108*	1.87	0.213***	3.23	0.190***	3.76	0.274***	4.78	0.161***	3.13	0.272***	3.82	0.183***	3.35	0.278***	3.99
d) INSTITUTIONS																
INDEX ICRG	4.187***	3.85	3.657***	3.04												
RULE OF LAW					2.666***	2.92	3.281***	3.35								
BUREAUCRATIC QUALITY									2.633***	3.48	1.730**	2.40				
ETHNIC TENSION											1.273**	2.09	1.122*	1.93		
CORRUPTION															3.298***	4.08
															2.567***	3.32
Observations	71		71		71		71		71		71		71		71	
Prob > F	0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000	
R-squared	0.566		0.557		0.524		0.574		0.549		0.521		0.484		0.508	

Notes: The dependent variables are: TAX EFFORT: tax revenues/GDP, REVENUE EFFORT: current revenues/GDP. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Regressions with robust standard errors. Hausman Chi-square tests fail to detect the presence of simultaneity of the TAX/REVENUE EFFORT and INSTITUTIONS. Thus, only OLS has been estimated. Instrumental variable: latitude.

Table 4: Tax/Revenue Effort and Inequality

Model	<i>OLS</i>		<i>OLS</i>		<i>OLS</i>		<i>OLS</i>	
<i>Dependent Variables</i>	<i>Tax Effort</i>		<i>Revenue Effort</i>		<i>Tax Effort</i>		<i>Revenue Effort</i>	
Independent Variables	<i>Coeff.</i>	<i>t-Stat.</i>	<i>Coeff.</i>	<i>t-Stat.</i>	<i>Coeff.</i>	<i>t-Stat.</i>	<i>Coeff.</i>	<i>t-Stat.</i>
a) DEVELOPMENT								
GDP PER CAPITA	-0.3E-03	-1.29	-0.1E-03	-0.34	-0.001***	-4.21	-0.001***	-2.71
POPULATION GROWTH	-1.868**	-2.23	-2.383***	-2.85	-1.852***	-3.05	-2.283***	-3.11
b) OPENNESS								
(EXPORT + IMPORT)/GDP	0.055***	2.56	0.082***	3.45	0.067***	3.99	0.088***	4.81
c) ECONOMIC STRUCTURE								
1 - AGRICULTURE/GDP					0.214***	4.63	0.278***	4.44
d) INSTITUTIONS								
INEQUALITY	-0.511***	-3.21	-0.254*	-1.85	-0.489***	-3.64	-0.210	-1.57
Observations	89		89		86		86	
Prob > F	0.000		0.000		0.000		0.000	
R-squared	0.416		0.355		0.582		0.557	

Notes: The dependent variables are: TAX EFFORT: tax revenues/GDP, REVENUE EFFORT: current revenues/GDP. Significance levels: * $0.05 < p < 0.10$, ** $0.01 < p < 0.05$, *** $p < 0.01$. Regressions with robust standard errors. Hausman Chi-square test fail to detect the presence of simultaneity of the TAX/REVENUE EFFORT and INEQUALITY (instrumental variables: ethnic, latitude, English (legal origin)). Thus, only OLS has been estimated.

Table 5: Tax/Revenue Effort and the Size of Shadow Economy

Model	OLS		2SLS		OLS		2SLS		OLS		2SLS		OLS		2SLS	
Dependent Variable	Tax Effort		Tax Effort		Revenue Effort		Revenue Effort		Tax Effort		Tax Effort		Revenue Effort		Revenue Effort	
Independent Variables	Coeff.	t-Stat.	Coeff.	t-Stat.	Coeff.	t-Stat.	Coeff.	t-Stat.	Coeff.	t-Stat.	Coeff.	t-Stat.	Coeff.	t-Stat.	Coeff.	t-Stat.
a) DEVELOPMENT																
GDP PER CAPITA	0.3E-04	0.08	-0.001	-1.66	0.000	-0.220	-0.001*	-1.790	-0.001***	-3.620	-0.001***	-3.45	-0.001***	-3.73	-0.002***	-3.2
POPULATION GROWTH	-3.296***	-4.39	-4.566***	-4.09	-2.700***	-3.130	-4.260***	-3.150	-3.099***	-4.890	-4.163***	-4.13	-2.420***	-3.30	-3.748***	-3.04
b) OPENNESS																
(EXPORT + IMPORT)/GDP	0.029	1.17	0.004	0.11	0.050**	2.030	0.019	0.410	0.047***	3.330	0.027	0.86	0.072***	4.59	0.046	1.14
c) ECONOMIC STRUCTURE																
1 - AGRICULTURE/GDP									0.253***	4.920	0.203*	1.99	0.319***	4.31	0.250*	1.82
d) WILLINGNESS TO PAY																
SIZE OF SHADOW ECONOMY	-0.137*	-1.92	-1.122**	-2.12	-0.199**	-2.590	-1.475**	-2.050	-0.116**	-2.040	-0.866*	-1.88	-0.173***	-3.01	-1.169*	-1.87
Observations	68		67		68		67		67		66		67		66	
Prob > F	0.000		0.002		0.000		0.015		0.000		0.000		0.000		0.000	
R-squared	0.337				0.269				0.509				0.464			

Notes: The dependent variables are: TAX EFFORT: tax revenues/GDP, REVENUE EFFORT: current revenues/GDP. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Regressions with robust standard errors. Hausman Chi-square test with CONTROL OF CORRUPTION (Kaufmann et al. 2003) as an instrument for SIZE OF SHADOW ECONOMY detected the presence of simultaneity of the TAX/REVENUE EFFORT and the SIZE OF SHADOW ECONOMY. Thus, a 2SLS has been estimated.

Table 6: Tax/Revenue Effort and Tax Morale

Model	<i>OLS</i>		<i>OLS</i>		<i>OLS</i>		<i>OLS</i>	
<i>Dependent Variables</i>	<i>Tax Effort</i>		<i>Revenue Effort</i>		<i>Tax Effort</i>		<i>Revenue Effort</i>	
<i>Independent Variables</i>	<i>Coeff.</i>	<i>t-Stat.</i>	<i>Coeff.</i>	<i>t-Stat.</i>	<i>Coeff.</i>	<i>t-Stat.</i>	<i>Coeff.</i>	<i>t-Stat.</i>
a) DEVELOPMENT								
GDP PER CAPITA	0.001*	1.97	0.001	1.46	3.00E-04	0.72	4.00E-05	0.1
POPULATION GROWTH	-3.630***	-3.43	-3.892***	-3.64	-3.269***	-3.01	-3.486***	-3.17
b) OPENNESS								
(EXPORT + IMPORT)/GDP	0.091**	2.31	0.085**	1.98	0.109**	2.64	0.105**	2.34
c) ECONOMIC STRUCTURE								
1 - AGRICULTURE/GDP					0.277	1.65	0.311*	1.82
d) WILLINGNESS TO PAY								
TAX MORALE	4.998*	1.86	7.212**	2.43	3.628	1.25	5.674*	1.77
Observations	36		36		36		36	
Prob > F	0.000		0.000		0.000		0.000	
R-squared	0.573		0.492		0.622		0.547	

Notes: The dependent variables are: TAX EFFORT: tax revenues/GDP, REVENUE EFFORT: current revenues/GDP. Significance levels: * $0.05 < p < 0.10$, ** $0.01 < p < 0.05$, *** $p < 0.01$. Regressions with robust standard errors. Hausman Chi-square test with LATITUDE as an instrument for TAX MORALE fail to detect the presence of simultaneity of the tax effort and tax morale variable.

Table 7: Determinants of Tax/Revenue Effort (Fuller Specification with the Size of Shadow Economy)

Model	<i>OLS</i>		<i>OLS</i>		<i>OLS</i>		<i>OLS</i>	
<i>Dependent Variables</i>	<i>Tax Effort</i>		<i>Revenue Effort</i>		<i>Tax Effort</i>		<i>Revenue Effort</i>	
Independent Variables	<i>Coeff.</i>	<i>t-Stat.</i>	<i>Coeff.</i>	<i>t-Stat.</i>	<i>Coeff.</i>	<i>t-Stat.</i>	<i>Coeff.</i>	<i>t-Stat.</i>
a) DEVELOPMENT								
GDP PER CAPITA	-0.001***	-5.74	-0.001***	-4.70	-0.001***	-6.41	-0.001***	-6.01
POPULATION GROWTH	-2.024***	-3.17	-1.306	-1.65	-1.191*	-1.79	-0.239	-0.30
b) OPENNESS								
(EXPORT + IMPORT)/GDP	0.039***	3.00	0.062***	4.22	0.045***	3.37	0.070***	4.54
c) ECONOMIC STRUCTURE								
1 - AGRICULTURE/GDP	0.191***	3.82	0.245***	3.96	0.131**	2.20	0.157**	2.11
d) INEQUALITY								
	-0.438***	-3.40	-0.424***	-2.86	-0.402***	-3.18	-0.379**	-2.44
e) WILLINGNESS TO PAY								
SIZE OF SHADOW ECONOMY	-0.049	-0.91	-0.105*	-1.96	0.057	0.74	0.048	0.57
f) INSTITUTIONS								
INDEX GOVERNANCE	3.054	1.66	4.462*	1.78				
ICRG INDEX					3.241**	2.26	4.952**	2.55
Observations	61		61		53		53	
Prob > F	0.000		0.000		0.000		0.000	
R-squared	0.683		0.615		0.673		0.621	

Notes: The dependent variables are: TAX EFFORT: tax revenues/GDP, REVENUE EFFORT: current revenues/GDP. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Regressions with robust standard errors.

Table 8: Determinants of Tax/Revenue Effort (Fuller Specification with Tax Morale)

Model	<i>OLS</i>		<i>OLS</i>		<i>OLS</i>		<i>OLS</i>	
<i>Dependent Variables</i>	<i>Tax Effort</i>		<i>Revenue Effort</i>		<i>Tax Effort</i>		<i>Revenue Effort</i>	
Independent Variables	<i>Coeff.</i>	<i>t-Stat.</i>	<i>Coeff.</i>	<i>t-Stat.</i>	<i>Coeff.</i>	<i>t-Stat.</i>	<i>Coeff.</i>	<i>t-Stat.</i>
a) DEVELOPMENT								
GDP PER CAPITA	-0.8E-04	-0.19	-0.5E-03	-1.01	-0.001	-1.17	-0.001	-1.640
POPULATION GROWTH	-1.923	-1.50	-1.974	-1.42	-2.479	-1.48	-3.194*	-1.780
b) OPENNESS								
(EXPORT + IMPORT)/GDP	0.059*	1.79	0.048	1.13	0.106**	2.31	0.126**	2.140
c) ECONOMIC STRUCTURE								
1 - AGRICULTURE/GDP	0.094	0.60	0.096	0.63	0.130	0.60	0.123	0.650
d) INEQUALITY								
	-0.502**	-2.49	-0.550**	-2.15	-0.010	-0.03	0.159	0.360
e) WILLINGNESS TO PAY								
TAX MORALE	0.668	0.23	2.012	0.61	1.563	0.40	3.320	0.780
f) INSTITUTIONS								
INDEX GOVERNANCE	3.998**	2.06	5.241**	2.34				
ICRG INDEX					4.875**	2.37	5.987**	2.280
Observations	33		33		26		26	
Prob > F	0.000		0.000		0.000		0.000	
R-squared	0.749		0.693		0.744		0.698	

Notes: The dependent variables are: TAX EFFORT: tax revenues/GDP, REVENUE EFFORT: current revenues/GDP. Significance levels: * $0.05 < p < 0.10$, ** $0.01 < p < 0.05$, *** $p < 0.01$. Regressions with robust standard errors. No 2SLS has been conducted because the standard asymptotic approximations to the distribution of instrumental variables breaks down. The use of weak instruments would produce biases in the 2SLS estimators.

4. Conclusion

The main theme of this paper is that a more legitimate and responsive state is likely an essential precondition for a more adequate level of tax effort in developing countries. While at first glance giving such advice to poor countries seeking to increase their tax ratios may not seem more helpful than telling them to find oil, it is presumably more feasible for people to improve their governing institutions than to rearrange nature's bounty. Furthermore, improving social institutions, such as enhancing the rule of law and reducing corruption, may not take longer nor be necessarily more difficult than changing the opportunities for tax handles and economic structure, such as the relative share of agriculture in the economy or the weight of imports and exports in GDP.

The most important contribution of this paper has been to extend the conventional model of tax effort by showing that not only do supply factors matter, but that societal institutions or demand factors common to all countries also matter quite significantly in the determination of tax effort. But, in order to fully understand the performance of any one country one needs to pay close attention, of course, to the factors particular to that country.

Annex Table 1: Summary of Previous Conventional Studies of Tax Effort

	Bahl (2003) OECD and less developed economies	Alm and Martinez-Vazquez (2003b) Developed and Developing countries	Teera (2002) Developed and Developing Countries	Piancastelli (2001) Developed and Developing Countries	Stotsky and WoldeMariam (1997) Sub-Saharan African countries	Tanzi (1992) Developing countries	Leuhold (1991) African countries	Bahl (1971) Developing countries	Shin (1969) Developed and Developing countries	Lotz and Morss (1967) Developed and Developing countries
<i>Dependent Variable</i>	Ratio of tax revenue to GDP	Ratio of total tax revenue to GDP	Tax to GDP ratio	Total Tax Revenues/GDP	Tax share in GDP	Tax share	Tax share	Taxable capacity	Tax Ratio	Ratio of tax revenue to GNP
Explanatory Variables	The non-agricultural share of GDP <i>(positive, statistically significant)</i>	Agriculture/GNP <i>(negative, statistically not significant)</i> Mining/GNP <i>(positive, statistically significant)</i>	Ratio of agriculture to GDP <i>(negative and positive depending on the estimation, strong negative impact for low income countries)</i> Ratio Manufacturing to GDP <i>(negative, not statistically significant)</i>	Agriculture GDP share <i>(negative and positive, negative and statistically significant in a panel analysis)</i> Industry GDP share <i>(positive, statistically significant in a time series analysis)</i> Service GDP share <i>(positive, not always statistically significant)</i>	The share of agriculture <i>(negative, statistically significant)</i> The share of mining <i>(negative, statistically significant)</i> Manufacturing share <i>(positive, negative, not statistically significant)</i>	The share of agriculture in GDP <i>(negative, statistically significant)</i>	The share of agriculture in income <i>(negative, but not always statistically significant)</i> The share of mining in income <i>(positive, negative, not statistically significant)</i>	The agricultural share <i>(negative, statistically significant)</i> The mining share <i>(positive, statistically significant)</i>	Per Capita GNP <i>(positive, statistically significant only for the whole sample and the sub-samples high an low income countries)</i>	Per capita GNP <i>(positive, statistically significant for the entire sample and the low income countries)</i>
	Openness ratio (the sum of the value of exports and imports as a share of GDP) <i>(positive, statistically significant)</i>	GNP per capita <i>(negative, statistically significant)</i>	GDP per capita <i>(negative and positive, not always statistically significant)</i>	GNP per capita <i>(positive/negative tendency: positive, but not always statistically significant)</i>	Per capita income <i>(positive, statistically significant)</i>	Per capita income <i>(positive, but not statistically significant for some years)</i>	The share of foreign trade (share of imports and exports in income) <i>(positive, statistically significant)</i>	Per capita income <i>(positive, not statistically significant)</i>	Foreign Trade Ratio <i>(positive, not statistically significant)</i>	Sum of exports and imports as a percentage of GNP <i>(positive, statistically significant for the entire sample and the low-income countries, not significant for the high-income countries)</i>

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	The rate of population growth <i>(positive, statistically significant)</i>	Taxes on international trade/GNP <i>(negative, not statistically significant)</i>	Ratio of exports plus imports to GDP <i>(negative and positive, not statistically significant, strong positive effect for lower middle income countries)</i>	Trade/GDP <i>(positive, statistically significant)</i>	The share of imports in GDP <i>(positive/negative, not statistically significant)</i> The share of exports in GDP <i>(positive, statistically significant)</i>	The share of imports in GDP <i>(positive, statistically significant)</i>	The share of foreign grants and loans in income <i>(positive, statistically significant)</i>	The export ratio <i>(positive, but not always statistically significant)</i>	The agricultural income ratio <i>(negative, not statistically significant)</i>	
	Simple correlation between tax effort and the size of shadow economy <i>(negative, but not statistically significant)</i>	Shadow economy / GDP <i>(negative, statistically significant)</i>	Shadow economy <i>(positive, not always statistically significant, negative and statistically significant in one estimation for OECD countries)</i>			Level of foreign debt in GDP <i>(Positive, but not statistically significant in all estimations)</i>			The rate of change in prices <i>(positive, only statistically significant for the low income countries)</i>	

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			Further variables: Ratio of aid (tendency: negative impact) Ratio of expenditures to GDP (tendency: positive) Ratio of total expenditures (tendency: negative and positive)						The rate of growth in population (negative, statistically significant for the whole sample and the low income countries)
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Annex Table 2: Descriptive Statistics for Tax Effort

Variable	Observations	Mean	Min	Max
<i>Total Data Set</i>				
TAX EFFORT	108	18.21	1.09	38.33
REVENUE EFFORT	108	22.64	2.48	46.38
<i>Latin America</i>				
TAX EFFORT	23	17.78	9.98	25.96
REVENUE EFFORT	23	20.95	12.64	29.42

Annex Table 3: Variable Descriptions and Sources

Variables	Description	Source
TAX EFFORT	tax revenue as a share of GDP (average 1990-1999)	WDI (2003)
REVENUE EFFORT	current revenues/GDP (excluding grants, average 1990-1999)	WDI (2003)
GDP PER CAPITA	average 1990-1999	WDI (2003)
POPULATION GROWTH	average 1990-1999	WDI (2003)
(EXPORT + IMPORT)/GDP	average 1990-1999	WDI (2003)
1 - AGRICULTURE/GDP	average 1990-1999	WDI (2003)
INEQUALITY	GINI coefficient (average 1990-1999)	Galbraith and Kum (2003)
SIZE OF SHADOW ECONOMY	shadow economy as a percentage of GDP (average 1990, 1995, 1999)	Schneider and Klinglmaier (2003)
TAX MORALE	survey question (average: World Values Survey (WVS) 1990-1993, WVS 1995-1997, European Values Survey (1999) and Latinobarómetro (1998) 1999-2000, Latinobarómetro 1998)	Inglehart, R. et al. (2000), European Values Survey (1999) and Latinobarómetro (1998)
INDEX GOVERNANCE	covers the mean value of six governance dimensions (periods 1996, 1998 and 2000)	Kaufmann, Kraay, and Mastruzzi (2003)
ICRG INDEX	covers the mean value of six risk dimensions (period: 1990-1997)	Knack (1999)

Appendix

The Paradox of Mexico's Constant Tax Effort

In this appendix, we take a more in-depth look at Mexico, as illustrating both the apparent stability of the 'equilibrium' discussed in Section 2 and the importance of 'country-specific' factors in understanding any particular case in addition to the general factors explored empirically in Section 3. The performance of Mexico's tax system presents a paradox. Tax policy and tax administration reforms over the last two decades have yielded a tax structure that is in many ways comparable, if not superior, to that in many OECD countries. Nonetheless, Mexico's tax system has continued to perform poorly in such fundamental ways as its ability to raise adequate revenues.³³ Numerous studies have noted that the level of public expenditure in Mexico is too low for the physical infrastructure and human capital needs of the country. An important problem facing Mexico is its inability to raise adequate revenues to finance basic public sector goods and services adequately.

Mexico's tax effort has not changed significantly for a quarter of a century (Table A-1). Total federal revenues (which exclude social security funds and subnational governments) and federal tax revenues (which exclude oil and other non-tax revenues) as percent of GDP have both moved up and down over the last two decades but have remained relatively stable overall, averaging between 15 and 16 percent for total federal revenues and between 10 and 11 percent for tax revenues. From 1980 to 2003, tax revenues rose only from 10.9 percent to 11.3 percent of GDP, and total federal revenues only went up from 15.3 percent to 16.8 percent.³⁴

This poor revenue performance is hard to explain given the marked improvements in the tax system. Mexico's tax structure has been systematically improved over the past three decades. In income taxation there is practically full indexation of personal and enterprise profit tax for inflation, full integration of these two taxes to avoid the double taxation of

³³ See Martinez-Vazquez (2001). This statement does not represent any normative judgment of the fiscal performance of Mexico. There is no absolute scale against which one can assess how good or bad a country's relative size of the public sector is. The share of government in GDP reflects, among other things, the collective preferences of a country for public goods and services vis-a-vis private consumption. Clearly, from an economic standpoint, these preferences cannot be judged right or wrong. The point is simply that, by general consensus in Mexico, the current level of revenues does not seem to be adequate to support all the expenditure programs that are desired.

³⁴ The overall adequacy of revenues can be further illuminated by examining the behavior of the government budget deficit. The sustained deficits during the 1980s may indicate that Mexico's level of tax effort was too low to cover the level of expenditures desired by the government. The budget imbalance during the 1980s was very pronounced. Closing a deficit of 10 percent of GDP would have required practically doubling the existing level of tax effort. But clearly the same conclusion does not apply to the 1990s. The very small budget deficits since 1993 may suggest either that Mexico has reached some sort of equilibrium vis-a-vis its desired level of tax effort or simply that other forces have been able to impose fiscal discipline in the federal budget.

dividends, and the application of a minimum tax on gross assets, to which the enterprise profit tax is creditable, to combat tax evasion. The structures of the VAT and excise taxes also have been on the whole quite adequate. At the same time many nuisance taxes were eliminated over the years. The standard tax rates for the main taxes are quite similar or slightly below international averages. The effective marginal rates of taxation on new investment are also below those of OECD averages, thus creating a favorable atmosphere for domestic and foreign investment, but not so low that help explain the overall level of tax effort of this country.³⁵

It is thus surprising that Mexico's tax system has not been able to generate much more than 11 percent of GDP in tax revenues. It is even more surprising because the most common objective of the different tax reforms over almost three decades, including the latest attempted reform by President Vicente Fox at the start of his administration in 2000, has been to increase the revenue adequacy of the tax system in order to be able to improve the quality and quantity of public services.

A number of factors help account for Mexico's enduring low tax effort over the years. First, as we discuss in Section 3 above, a country's tax effort performance can be explained in part by factors common to many other countries. These include supply factors, such as tax handles, and also demand factors or institutions, such as corruption, the quality of governance, tax morale, and so on. Second, there are often individual or country-specific factors that may contribute significantly to explaining the remaining quarter or more of revenue performance. Several country specific factors appear to have played an important role in Mexico's lackluster performance.

A first set of country-specific factors relates to the management of tax policy. The good fundamental structure of Mexico's tax system and its revenue performance has been undermined by ad hoc policy measures:

- In the case of the personal income tax, for example, the common difficulty of taxing employee fringe benefits at the personal level led policy makers in Mexico to exempt from tax all types of fringe benefits and at the same time to create a complex system of credits and actual subventions (negative taxes or transfers) to compensate employees who may lack fringe benefits in their compensation packages. This compensatory system in turn created notches with extremely high marginal tax rates for taxpayers, which induces more evasion.
- Similarly, with respect to the tax on enterprise profits, several economic sectors,

³⁵ See Martinez-Vazquez (2001) and Chen and Martinez-Vazquez (2003)

including all agriculture and transport, benefited from a special regime in which the tax base was calculated on a cash-flow basis. Agriculture, other primary sectors, and publishing also benefit from a special regime with a tax rate that is half of that applied under the general corporate income tax regime. A simplified small taxpayer regime based on the taxation of gross income is also too generous because it applies to businesses with gross annual incomes under \$220,000.

- In the case of the VAT, Mexico has zero-rated (rather than exempted) a wide list of domestic goods and services, including agricultural goods, foodstuffs, medicines, and equipment used in agriculture.

All these special departures from the general regimes add excess burdens, cost revenues and reduce the elasticity of tax revenues in relation to GDP. They also undermine the confidence of taxpayers in the fairness of the system, eventually reducing voluntary compliance.

A second set of country-specific factors has to do with the management of tax enforcement. The system of tax administration in Mexico has faltered because tax policy measures have ignored the ability of the current tax administration to enforce complex tax issues and also because the tax administration service has simply failed to modernize and, indeed, may have gone backwards in some of the institutional improvements achieved during the mid-1980s. Mexican authorities have put the “cart of tax policy” before the “horse of tax administration.”

- An important example is the liberal use of consolidation rules for dependent enterprises. Only a few tax accountants in the private sector have the skills to follow the complex current rules, and there is no one in the tax administration qualified to challenge or audit many of the consolidated tax returns. Tax compliance in consolidation cases is thus truly ‘voluntary’. In effect, that tax policy makers unwittingly wrote a blank check to a powerful group of taxpayers (about 350 consolidated groups involving 5,000 separate companies).
- Another example is the use of a value-added system up to the wholesale level for collecting many of the excise taxes. Collecting excise taxes at a single stage at the factory and import levels has proven to be more effective in most other countries.

Persistent high levels of tax evasion demonstrate that Mexico’s tax administration is not capable of enforcing the current tax system at an acceptable level. The focused efforts to improve the efficiency of the tax administration system in the late 1980s were not sustained during the 1990s. Either tax policy should be adapted to the current capabilities of tax

administration, or the capabilities of the tax administration need to be improved significantly.

A final set of country-specific factors is that the Mexican authorities, despite general pronouncements of the need for higher revenue collections, have pursued a policy -- at times implicit but more often explicit -- of keeping the ratio of revenues to GDP at a relatively constant level. This goal of the constancy of tax effort has been achieved in two ways.

First, any increases in revenues from an elastic response of the tax structure to economic growth, enlargement of the tax bases, or increased revenues from petroleum was generally followed by discretionary tax policy measures such as lowering tax rates or granting special regimes with the result of keeping actual tax effort more or less constant over the years.

A second type of reaction to changes in the actual ratio of revenues to GDP has been the discretionary relaxation or tightening of tax administration effort.

Of these two types of reactions, discretionary changes in tax policy appear to have played a more important role. During the decade of the 1980s, for instance, a reverse or mirror image of revenue movements from petroleum and non-petroleum sources was evident. The chronology of tax concessions parallels periods in which the automatic elasticity of the system would otherwise have produced an increase in revenue effort. It has been a common, although not explicitly stated, policy within the Ministry of Finance during much of the last two decades that any increase in revenues should be spent by the Ministry itself in the form of rate reductions of tax expenditures rather than on the expenditure side of the budget by line ministries and other budget units.

In addition, to a large degree, the goal of keeping tax effort constant was a significant result of the "negotiated" tax burdens agreed upon by the government authorities and the representatives of the private sector. The political economy of taxation in Mexico has involved periodic discussions and agreements between, on the one side, a willingly compliant compact of large taxpayers (with and without the state petroleum monopoly, PEMEX) and, on the other side, the government authorities agreeing to compromise on the overall level of tax effort.

The use of the second venue for adjustment, changes in the level of enforcement or effort by the tax administration, has been more asymmetric. It is not so much that tax enforcement efforts were relaxed when government revenues were up, but more that high concentrated levels of enforcement were launched (in the form of "tax crusades" and so on) only when government revenues were dramatically down due to economic crises and business cycle downturns.

One important implication of this argument is that if Mexico is to raise its tax effort, explicit agreement among the government and the private sector on the desirability and level of the higher tax effort will be needed. A second implication is that the Ministry of Finance should refrain from further changes in tax policy after the tax reform package is introduced. In particular, the notion that Finance has the right to “spend” on the revenue side of the budget any automatic increases in tax effort needs to be eradicated. A third implication is that the overall management of the tax administration should be detached from political pressures to fine tune the actual level of tax enforcement to the economic or political cycles. Other than providing its annual budget, the federal government should leave the tax administration alone to execute a sustained optimal level of tax enforcement that is allowed by its budget.

Table A-1: General Government Revenues as a Percentage of GDP

	1980	1982	1984	1986	1988	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	1999 ^k	2000	2001	2002	2003
Total Federal Revenues	15.30	15.63	16.88	16.00	16.34	15.93	18.69	18.70	15.51	15.52	15.25	15.68	15.84	14.17	14.52	14.66	15.80	16.15	15.80	16.78
Tax Revenues	10.91	9.98	10.46	11.53	11.53	10.90	10.71	11.26	11.40	11.29	9.27	9.03	9.82	10.51	11.21	11.34	10.58	11.26	11.63	11.34
Income Taxes	5.52	4.74	4.12	4.25	4.68	4.46	4.53	5.15	5.51	5.13	4.01	3.88	4.25	4.41	4.62	4.70	4.71	4.91	5.08	4.98
Value Added Tax	2.68	2.21	3.20	3.15	3.37	3.60	3.43	2.71	2.64	2.71	2.82	2.88	3.07	3.12	3.27	3.29	3.45	3.58	3.49	3.77
Excises	1.07	1.81	2.24	2.76	2.62	1.52	1.34	1.62	1.54	1.97	1.35	1.19	1.43	1.99	2.29	2.32	1.48	1.90	2.18	1.74
Import Taxes	0.99	0.84	0.52	0.87	0.44	0.86	1.04	1.14	1.01	0.89	0.61	0.59	0.57	0.56	0.60	0.59	0.60	0.50	0.43	0.40
Others ¹	0.65	0.37	0.38	0.49	0.43	0.45	0.37	0.65	0.70	0.58	0.49	0.49	0.50	0.44	0.44	0.44	0.34	0.37	0.45	0.45
Non-Tax Revenues²	4.38	5.66	6.42	4.47	4.81	5.03	7.98	7.44	4.11	4.23	5.98	6.65	6.02	3.66	3.31	3.32	5.21	4.89	4.17	5.43
Products, Services	0.18	0.24	0.15	0.05	0.08	0.26	0.26	0.34	0.14	0.24	0.48	0.29	0.27	0.31	0.17	0.17	0.13	0.11	0.08	0.08
Others ³	0.16	0.46	0.10	0.24	0.93	0.75	4.01	3.65	0.81	1.49	1.28	1.57	1.39	0.61	0.68	0.84	1.24	1.27	1.54	1.34
Duties ⁴	4.04	4.96	6.17	4.18	3.80	4.02	3.70	3.45	3.17	2.49	4.22	4.79	4.37	2.75	2.46	2.31	3.84	3.50	2.54	4.02
Of Which:																				
Hydrocarbon Duties	3.66	4.67	5.75	3.69	3.21	3.51	3.27	3.04	2.78	2.19	3.93	4.51	4.08	2.32	2.11	1.97	3.57	3.23	2.24	3.74
Other Duties	0.38	0.29	0.42	0.49	0.58	0.51	0.44	0.40	0.39	0.31	0.28	0.29	0.29	0.42	0.36	0.35	0.27	0.28	0.30	0.28
Social Security	2.94	3.20	2.41	2.50	2.36	2.57	2.74	2.90	3.24	3.44	3.10	2.94	3.06	3.28	3.41	3.44	3.43	3.60	3.66	3.85
Contributions ⁵	2.45	2.47	1.96	2.14	2.14	2.32	2.39	2.72	2.98	3.15	2.68	2.54	2.70	2.88	2.97	2.99	3.01	3.16	3.21	2.11
Non-Tax Revenues	0.49	0.73	0.45	0.36	0.21	0.24	0.35	0.18	0.26	0.29	0.42	0.40	0.36	0.39	0.44	0.45	0.42	0.45	0.45	1.74
Subnational⁶	..	..	..	..	..	0.88	0.88	1.16	1.17	1.19	1.11	0.89	1.07	0.96	..	..	..	..	..	..
Taxes	..	..	..	..	..	0.27	0.33	0.40	0.42	0.40	0.36	0.35	0.41	0.37	..	..	..	..	..	..
Non-Tax Revenues ⁷	..	..	..	..	..	0.61	0.55	0.76	0.76	0.78	0.76	0.55	0.66	0.59	..	..	..	..	..	..
GDP (Billion Pesos)	4.5	9.8	29.5	79.2	416.3	738.9	949.1	1125	1256	1420	1837	2504	3179	3847	4623	4599	5497	5813	6262	6755

Source: Secretariat of Finance, Bank of Mexico, and authors' calculations. Total federal revenues include compensated operations, which are revenues for social security institutions and expenditures for the Federal Government. Compensated operations are excluded from the calculations presented in this table.

¹ Includes export taxes, some payroll taxes, accessories revenues, etc. After 1992, data for accessories revenues are reported in other tax revenues. Prior to 1992, the data series was reported separately. For consistency, prior to 1992, the data for accessories is added to other revenues.

² In 1988 includes revenues from zero-coupon bonds. In 1991, 1992 and 1994 includes revenues from the sale of public enterprises

³ Includes revenues from penalties, surcharges, privatization proceeds, etc.

⁴ Prior to 1991, revenues from PEMEX were reported as a separate revenue line item. Prior to 1991, the data in this table are the reported data for revenues from PEMEX.

⁵ For 1977 to 1991, the data series did not contain sufficient detail to identify the social security contributions of the Federal Government and these contributions are included as others of social security. From 1992, the contributions of the Federal Government are identified and are classified as social security contributions.

⁶ Subnational revenue data is only available from 1989-1998.

⁷ Non-tax revenues include fees, public services (including Productos and Aprovechamientos), and other revenues.

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