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Tax Effort in Developing Countries and High Income Countries: The Impact of Corruption, Voice and Accountability

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Abstract: In this paper we argue that a more legitimate and responsive state is an essential factor for a more adequate level of tax effort in developing countries and high income 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. Improving corruption, voice and accountability may not take longer nor be necessarily more difficult than changing the opportunities for tax handles and economic structure. The paper also shows that high income countries have also the potential of improving their tax performance through improving their institutions. The key contribution of this paper is to extend the conventional model of tax effort by showing that not only do supply factors matter, but that demand factors such as corruption, voice and accountability also determine tax effort to a significant extent.

I. INTRODUCTION

Many developing countries need to spend more on public infrastructure, education, health services and so on, and hence they need to increase their tax effort – tax revenue as a percentage of gross domestic product (GDP) – if they want to grow and to be less poor. The emphasis in earlier analysis of the low tax effort observed in many developing countries was on the 'supply side' factors or 'tax handles', such as the ready availability of (easily taxed) economic activities, for example, foreign trade and mining. These factors remain important in explaining what countries do, but telling a country that wants to raise its tax levels to find and tax natural resources is not a particularly promising piece of policy advice.

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'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 greater 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)? 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. 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.[2] 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 (2004) and that a country's tax system reflects its political institutions. In the words of Rodrik, Subramanian, and Trebbi (2002) it appears that 'Institutions rule' in this as in other areas of economic development.

The main reason many developing countries do not do tax themselves more may be that 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 traditional economists may have a problem in suggesting a viable solution. Thus, it is interesting to explore whether the recent political economy literature on the importance of voice and corruption provides more useful instruments in this respect. It is also useful to test this hypothesis in high income countries. More and more studies report the relevance of procedural fairness when examining tax systems in developed countries (for an overview see Torgler 2007). Thus, we are going to ask whether institutions can be modified to produce more 'pro-fiscal' outcomes (assuming for present purposes that this is desirable).[3]

II. POLITICAL EQUILIBRIUM

What is actually done will of course be determined in the political arena. Countries vary enormously in the effectiveness and nature of their political systems. 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

[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.'

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

[3] We do not, however, attempt a formal 'political economy' analysis of the problem: see, for example, Cheibub (1998) and Hettich and Winer (1999). The present paper significantly extends the empirical analysis in our earlier, broader treatment of some of these issues in Bird et al. (2006).

the key *institutions* – political (democracy, decentralization, 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 both such critical details as the progressivity of rates and the big outcomes such as the tax ratio with respect to GDP. Indeed, taxation is probably one of the clearest arenas in which to witness the working out of these complex forces.

The issue of low tax effort in developing countries has been particularly relevant in Latin America. Over the last forty years, most Latin American countries found it difficult to achieve a sustainable policy balance given the often conflicting and frequently changing forces, external and internal, economic and political, they have faced. It is thus not surprising that their tax policies have changed considerably over this period – though much less in either level or structure than might have been expected. Indeed, it may be that countries tend to achieve an equilibrium position with respect to the size and nature of their fiscal systems that largely reflects the balance of political forces and institutions, and stay at this position until 'shocked' to a new equilibrium.

In this respect, the data on taxation in Latin America, partial and in many ways unsatisfactory as they are, suggest several interesting insights. First, over the last few decades taxes have hardly increased at all in Latin America.[4] Some rates have risen, mainly for VAT, but many have declined, mainly for income taxes. The 'tax effort' (taxes as a share of GDP) 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). Second, 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. Third, although the reality of taxation in Latin America has changed little, 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.

These complexities are well illustrated in Mexico's case. 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: it was 10.2% in 1980 and 10.1% in 2004, for example. That study suggested 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. Similar relative constancy can be seen in other countries (e.g., Colombia) over the decades despite repeated tax reforms (McLure and Zodrow 1997). 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

[4] Cetranglo and Gomez-Sabaini (2006) show that the simple average of central taxes (excluding social security) fell from 11.0% of GDP in 1980 to 10.3% in 1990 and then rose slowly to 12.7% in 2000.

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, ‘reform’ in countries that have achieved an equilibrium position with respect to the size and nature of their fiscal systems may, in the absence of a change in the underlying balance of political forces and institutions mean not ‘change’ but ‘stability with respect to fiscal outcomes’.

The question remains, why so little change? Two alternative explanations are 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. In Latin America, no real consensus on the ‘right balance’ appears yet to have been achieved in most countries.

Different developed countries have clearly reached different equilibrium positions, demonstrating the continued viability of the so-called ‘welfare state’ model in most European countries and the equally viable but different lower-tax equilibrium in the U.S. and a few other countries (Lindert 2003). As Messere, de Kam, and Heady (2003) show, there has been essentially no convergence in either tax levels or structures among OECD countries in recent decades. 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 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. Taxation 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. Indeed, in this age of information and mobility no non-dictatorial government 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.

Thus, the key aim of the paper is to explain whether better institutions lead to a higher tax effort. The first hypothesis focuses on voice and accountability while the second one will explore the impact of corruption.

Hypothesis 1: A more encompassing and legitimate state is an essential precondition for a more adequate tax system. If taxpayers perceive that their interests (preferences) are properly represented in political institutions having a meaningful ‘voice’ in influencing the state their willingness to contribute increases.

The best that can be done to help the relevant decision-makers make the right decision is to ensure that they and all those affected are made as aware as possible of all the relevant consequences. 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'.[5]

Recent broader historical and comparative analysis broadly supports this argument.[6] Lindert (2002), for example, suggests that democratic polities do learn from experience, and do, over time, tend to reward more those parties that follow more prudent economic policies. Cheibub (1998) demonstrates that even new democracies have frequently raised taxes. 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. 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.'

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? 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.[7]

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

[5] 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…'.

[6] See Bird (2003) and Bräutigam et al. (forthcoming) for extended discussions. 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, de Kam, and Heady 2003, preface). Of course, how a tax administration functions is itself largely determined by more fundamental political factors.

[7] 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.

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. 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 do such arguments suggest with respect to increasing tax effort in Latin America or 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 mean that it has become 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 real question is why so little has 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. Frey and Eichenberger (1999, p. 89) argue that many developing countries have both 'over-government' and 'under-government', that is, a strong combination of interventionism and bureaucracy with property rights that are not sufficiently secured and where there is a high degree of uncertainty. In such an environment there are weak incentives for investment and entry in the formal sector. Corruption is high and bureaucrats have an incentive to delay transactions in order to extract higher payments. But, a main problem with rent creation through regulation is that it

> '...is often inefficient, in part because the policies they pursue to increase the rents from corruption are distortionary' (Djankov et al. 2002, p. 3).

There are situations in many developing countries where if people want to open a business, to acquire land or build homes they are confronted with very high transaction costs, and law-breaking may be the only option to survive. Hernando de Soto (2000) tested the seriousness of barriers to entry by creating a new and perfectly legal small business in Lima. His team spent six hours a day at it and was able to register the business 289 days later. The cost of the legal registration was $1,231, or thirty-one times the monthly minimum wage. To obtain the authorization to build a house on state-owned land took six years and 11 months, with 207 administrative steps in 52 government offices and to obtain legal title to that piece of land

took 728 steps.[8] Similar experiences have been described in other countries, e.g., Philippines, Egypt, and Haiti.[9] A state in which corruption is rampant is one in which citizens have little trust in authority and thus a low incentive to cooperate. De Soto (1989) reports that 10 times they were asked for a bribe to speed up the process and that twice paying the bribe was the only possible way to continue the experiment. It took 10 months in total to start the business.

Hypothesis 2: *In order to explain international differences in tax ratios we also need to take into account demand factors such as governance and the level of corruption. If taxpayers believe that they live in a state in which corruption is rampant and trust in authority low, the willingness to vote for higher levels of taxation and comply with their tax obligations will decrease*.

In sum, a contribution of this paper is thus to extend the basic tax effort model by establishing the extent to which *voice, accountability and good governance matter.* We argue 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 the next section we 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' affecting institutional quality like voice and corruption.

III. EMPIRICAL EVIDENCE FOCUSING ON DEVELOPING COUNTRIES

To test whether government quality fosters tax efforts, we propose the following baseline equation:

$$TE_i = \alpha + \beta_1 Y_i + \beta_2 POP_i + \beta_3 XM_i + \beta_4 NAGR_i + \beta_5 GOVQ_i + REGION_i + \varepsilon_i \quad (1)$$

where i indexes the countries in the sample, TE_i denotes the country's level of tax effort measured as the tax revenue as a share of gross domestic product (GDP), Y_i the GDP per capita (measured in $US), POP_i the rate of population growth, XM_i the ratio of exports plus imports to GDP, $NAGR_i$ the non agriculture share of GDP and $GOVQ_i$ are our indicators for voice/accountability and corruption. $REGION_i$ is a dummy variable that differentiates between Latin American and other developing or transition countries. εi denotes the error term. The model is estimated using cross-section data with mean values for the years 1990 to 1999. Data for the dependent variable and all the control variables comes from the World Development Indicators (WDI) for 2003.

8 Furthermore, de Soto argues that it is nearly as difficult to stay legal, as it is to become legal. In Venezuela, the share of employees working in legal enterprises decreased from two thirds in 1976 to less than half at the end of the century as people have created new business illegally to fill the gaps in the legal economy. On the persistence and even growth of informality in many countries, see Chen (2005).

9 For a recent study of these and other costs of doing business in different countries (see World Bank, 2006).

We begin our empirical part by re-examining the role of the traditional supply side variables of the tax effort literature. The explanatory variables employed in the 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.

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, for 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.

Equation 1 in *Table 1* contains our results for the conventional model. We observe the tendency that estimated coefficients for the explanatory variables are in line with predictions and largely coincide with previous findings in the literature. A faster rate of population growth leads to a lower tax ratio. A higher share of non-agricultural sector is correlated with a higher tax effort. The coefficient for GDP per capita does not have the predicted sign, but the results are in line with previous studies.[10] However, openness of the economy is not associated in our results with a higher tax effort.[11] Interestingly, we observe that Latin American countries have a statistically significant lower tax ratio than other developing and transition countries. This finding gives empirical support to the arguments developed in the previous section regarding the unsuccessful outcomes in Latin America.

In a next step we extend in equation 2 to 4 the traditional basic tax effort model that has ignored the role of demand factors in explaining relative revenue performance. We use the Kaufmann, Kraay, and Mastruzzi (2003) data set to measure *voice and accountability* and

[10] 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.

[11] As many countries have proceeded over the past several decades to lower tariff rates as part of their liberalization and economic reforms policies and joining the WTO, the strong link in the past between international trade and revenue collections may have weakened in more recent times.

Table 1: The Impact of Voice, Accountability and Corruption

Dependent Variable: Tax Effort	OLS		OLS		OLS		OLS	
Independent Variables	Beta	t-Stat.	Beta	t-Stat.	Beta	t-Stat.	Beta	t-Stat.
A) GOVERNANCE								
CORRUPTION			0.381***	3.35			0.240**	2.07
VOICE/ACCOUNTABILITY					0.388***	3.37	0.278**	2.13
B) DEVELOPMENT								
GDP PER CAPITA	-0.135	-1.04	-0.476***	-3.28	-0.305**	-2.28	-0.422***	-3.12
POPULATION GROWTH	-0.251***	-2.92	-0.384***	-4.43	-0.263**	-2.56	-0.294**	-2.88
C) OPENNESS								
(EXPORT + IMPORT)/GDP	-0.063	-0.84	-0.083	-1.39	-0.087	-1.24	-0.096	-1.57
D) ECONOMIC STRUCTURE								
1-AGRICULTURE/GDP	0.647***	6.15	0.448***	4.4	0.421***	4.05	0.397***	3.89
E) REGIONS								
LATIN AMERICA	-0.274***	-3.36	-0.151**	-2.01	-0.285***	-3.9	-0.243***	-3.23
F-Test: GOVERNANCE							9.83***	
Observations	105		104		104		104	
Prob > F	0.000		0.000		0.000		0.000	
R-squared	0.413		0.454		0.465		0.486	

Notes: The dependent variables are: TAX EFFORT: tax revenues/GDP. Significance levels: * $0.05 < p < 0.10$, ** $0.01 < p < 0.05$, *** $p < 0.01$. Regressions with robust standard errors. In the reference group: OTHER DEVELOPING AND TRANSITION COUNTRIES.

corruption. All scores lie between –2.5 and 2.5, with higher scores corresponding to better institutions (outcomes). The variable *voice and accountability* index includes in it a number of indicators that measure various aspects of the political process, civil liberties and political rights. The variable measures the extent to which citizens of a country are able to participate in the selection of governments. The index also includes three indicators that measure the independence of the media as a proxy of monitoring the authority and holding them accountable for their actions. The variable *corruption* measures perceptions of corruption using the conventional definition of *corruption* namely the exercise of public power for private gain. The index is developed from various sources covering different aspects that range from the frequency of 'additional payments to get things done' to the effects of corruption on the business environment (Kaufmann et al. 2003, p. 8). Kaufmann et al. (2003) stress that

> 'presence of corruption is often a manifestation of a lack of respect of both the corrupter (typically a private citizen) and the corrupted (typically a public official) for the rules which govern their interactions, and hence represents a failure of governance according to our definition' (p. 8).

Because of the high correlation (0.57) between *Corruption* and the *voice and accountability* variable, we use these two sets of indexes in alternate estimations in equation 2 and 3. In equation 4 we include both variables in the same specification. The relative role played by demand factors vis-à-vis supply factors is investigated by estimating *beta* or *standardized* regression coefficients. The results in *Table 1* show that the demand side determinants are highly relevant in explaining tax performance in transition and developing countries. The two variables are always statistically significant showing relatively high beta coefficients, comparable or even higher than the traditional supply factors. Thus, these empirical results suggest strongly that *corruption* and *voice and accountability* play a significant role in the determination of the level of tax effort of developing and transition countries. The joint role played by these demand factors can be investigated using a Wald-test for coefficient restrictions to test for *joint* significance. Equation 4 shows that the null hypothesis is rejected, meaning that these demand factors play a significant role in the determination of countries' tax performance. Though the conventional supply factors continue to play a robust and significant role throughout the estimations, demand factors clearly matter. 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. One last general result in *Table 1* is that Latin American countries show consistently lower tax performance compared to other developing and transition countries. This again provides statistical support for the arguments developed in the previous section of this paper that explained why Latin America countries have difficulties to improve their tax efforts.

An obvious problem with the approach above is that our two demand variables may be endogenous. For example, better institutions may lead to better tax performance, but in turn, poor tax performance can reduce the possibilities of establishing or maintaining well functioning institutions in developing and transition countries. To investigate any potential endogeneity problem, in *Table 2* we report two 2SLS estimations together with several diagnostic tests and the first stage regressions. *Table 2* indicates that for the 2SLS, the coefficients of

Table 2: 2SLS Estimations

	2SLS Dep.Var.: Tax Effort		*First stage Regression*		*2SLS* Dep.Var.: Tax Effort		*First stage regression*	
Independent Variables	*Coeff.*	*t-Stat.*	*Coeff.*	*t-Stat.*	*Coeff.*	*t-Stat.*	*Coeff.*	*t-Stat.*
A) GOVERNANCE								
CORRUPTION	19.573***	3.05						
VOICE/ACCOUNTABILITY					17.915**	2.19		
INSTRUMENTS								
LEGAL ORIGIN (ENGLISH)			0.284***	2.72			0.320**	2.05
FRACTION. INDEX			-0.681**	-2.43			-0.468	-1.12
B) DEVELOPMENT								
GDP PER CAPITA	-0.002***	-3.76	0.0001***	5.96	-0.001**	-2.46	0.00001	0.57
POPULATION GROWTH	-2.215***	-3.21	-0.027	-0.76	1.088	0.59	-0.222***	-4.15
C) OPENNESS								
(EXPORT + IMPORT)/GDP	-0.015	-1.64	0.000	-0.19	-0.016	-1.35	0.0001	0.09
D) ECONOMIC STRUCTURE								
1-AGRICULTURE/GDP	8.514	0.72	1.111**	2.54	3.906	0.22	1.598**	2.44
E) REGIONS								
LATIN AMERICA	-2.714	-1.19	-0.105	-0.9	-14.096**	-2.5	0.557***	3.18
Test of excl. instruments			4.96***				2.19	
Anderson canon. corr. LR stat.	10.25***				4.673*			
Anderson Rubin test	7.46***				7.46***			
Sargan statistic	0.720				1.047			
Observations	96				96			
Prob > F	0.000				0.000			

Notes: Significance levels: * $0.05 < p < 0.10$, ** $0.01 < p < 0.05$, *** $p < 0.01$.
In the reference group: OTHER DEVELOPING AND TRANSITION COUNTRIES.

corruption and the *voice and accountability* remain statistically significant. The choice of adequate instruments for institutions is not extensively addressed in the literature. However, studies such as those by Alesina et al. (2003) and La Porta et al. (1999) suggest factors such as ethnic, language and religion fractionalization or legal origin. Both studies state that that fractionalization leads to political instability, poor quality of institutions, badly designed economic policy and disappointing economic performance. As an instrument we take an index that covers ethnic, language and religion fractionalization (mean value) based on the Alesina et al. (2003) data set. As a second instrument we consider the legal origin of a country (dummy English common law origin) using the La Porta et al. (1999) data set. The idea behind using the legal origin as instrument is the fact that the legal system was acquired centuries ago as a part of the political system. La Porta et al. (1999) stress that the English common law started to develop in the 17th century due to the intention of limiting the power of the sovereign/state and therefore also the possibilities of corruption, emphasizing, for example, strongly aspects such as property rights.

Table 2 shows that these instruments are effective in explaining our demand factors. The first stage regressions indicate the instruments are mostly statistically significant at the 5 or 1% level. The *F*-tests for the instrument exclusion set in the first-stage regression is statistically significant in the first case at the 1% level. In addition, *Table 2* also reports a test for instrument relevance using the Anderson canonical correlations LR test for whether the equation is identified. The test shows that the null hypothesis can be rejected indicating that the model is identified and the instruments are relevant. The Anderson-Rubin test suggests that the endogenous variables are jointly statistically significant. Such a test is robust to the presence of weak instruments. We also present the Sargan test for over-identification for the first four 2SLS to examine the validity of the exclusion restrictions. The test results indicate that the Sargan tests fail to reject the null hypotheses that our instruments are valid.

IV. EMPIRICAL EVIDENCE FOCUSING ON HIGH INCOME COUNTRIES

In the next step we explore whether we also observe a robust relationship between governance quality and tax effort in high income countries using the World Bank definition (see http://www.worldbank.org/); the countries are listed in the Appendix. We are going to work with two time periods to maximize the number of observations, namely 1998 and 2000 (unbalanced panel).

The results are reported in *Table 3*. Also here we observe that the demand side determinants are highly relevant in explaining tax performance in high income countries. Both variables, *control of corruption* and *voice and accountability* are statistically significant in the first two regressions showing high beta coefficients and the Wald-test reports that the null hypothesis cannot be rejected. Interestingly, voice and accountability has a stronger impact on tax performance than corruption. This is also visible in the last regression when both factors are included together in the specification. These results support previous findings that indicate the strong role of voice and accountability in high income countries. For example, Torgler and Schneider (2007) find with Swiss data that tax evasion and the shadow economy is lower in

Table 3: The Impact of Voice, Accountability and Corruption in High Income Countries

Dependent Variable: Tax Effort	*OLS*		*OLS*		*OLS*	
Independent Variables	*Beta*	*t-Stat.*	*Beta*	*t-Stat.*	*Beta*	*t-Stat.*
A) GOVERNANCE						
CORRUPTION	4.169^{***}	3.49			-1.651	-0.94
VOICE/ACCOUNTABILITY			0.722^{***}	5.30	13.793^{***}	3.96
B) DEVELOPMENT						
GDP PER CAPITA	-0.399	-1.06	-0.045	-0.45	-0.004	-0.01
POPULATION GROWTH	-2.412^{***}	-4.12	0.037	0.32	0.865	0.85
C) OPENNESS						
(EXPORT + IMPORT)/GDP	0.022	0.91	0.148	1.29	0.019	1.08
D) ECONOMIC STRUCTURE						
1-AGRICULTURE/GDP	-0.793^{*}	-1.87	-0.195^{*}	-1.77	-0.491	-1.41
E) TIME EFFECTS	YES		YES		YES	
F-Test: GOVERNANCE					14.70^{***}	
Observations	41		41		41	
Prob > F	0.000		0.000		0.000	
R-squared	0.352		0.472		0.479	

Notes: Significance levels: * $0.05 < p < 0.10$, ** $0.01 < p < 0.05$, *** $p < 0.01$.
TIME EFFECTS: years 1998 and 2000 (2000 in the reference group).

cantons with a higher degree of direct political control. Torgler (2005) shows that a higher level of direct democracy in a jurisdiction leads to an increased willingness to pay taxes. Feld and Frey (2002) also observe that differences in the treatment of taxpayers by the tax authority are key, based on their empirical results using also data from Switzerland. Furthermore, Alm and Torgler (2006) analyse tax morale in the United States and in Europe. They find that countries with a higher level of democracy have a higher willingness to pay taxes.

In sum, our findings indicate that governance factors clearly matter. These results give support to the hypothesis that societies' willingness to tax themselves depends on good government institutions. These results hold for developing as well as developed countries.

V. CONCLUSION

The fundamental conclusion 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 and also high income countries.

These results have a particular strong policy implication for 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 institutions such as enhancing voice or accountability 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 the non-agriculture sector in the economy or the weight of imports and exports in GDP.

Moreover, the results also indicate that high income countries can also improve their tax performance through improving their governance structure. In particular, an improvement in voice and accountability will lead to a higher tax effort.

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 demand factors common to all countries also matter quite significantly in the determination of tax effort. Of course, in order to fully understand the performance of any one country one needs to pay close attention to the factors that are particular to that country. To return to where we began, in Kaldor's terms, countries have indeed 'learned to tax'…to the extent that their institutions lead them to do so.

APPENDIX

Table A1: 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)
CORRUPTION	covers the mean value of six governance dimensions (periods 1996, 1998 and 2000)	Kaufmann, Kraay, and Mastruzzi (2003)
VOICE	covers the mean value of six governance dimensions (periods 1996, 1998 and 2000)	Kaufmann, Kraay, and Mastruzzi (2003)
ENGLISH	dummy English common law origin	La Porta et al. (1999)
FRACTIONALIZATION INDEX	ethnic, language and religion fractionalization (mean)	Alesina et al. (2003)

Table A2: High Income Countries

AUSTRALIA	KUWAIT
AUSTRIA	LUXEMBOURG
BELGIUM	NETHERLANDS
CANADA	NORWAY
CZECH REPUBLIC	PORTUGAL
DENMARK	SLOVENIA
ESTONIA	SOUTH KOREA
FINLAND	SPAIN
FRANCE	SWEDEN
GERMANY	SWITZERLAND
GREECE	UNITED ARAB EMIRATES
ICELAND	UNITED KINGDOM
ITALY	

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