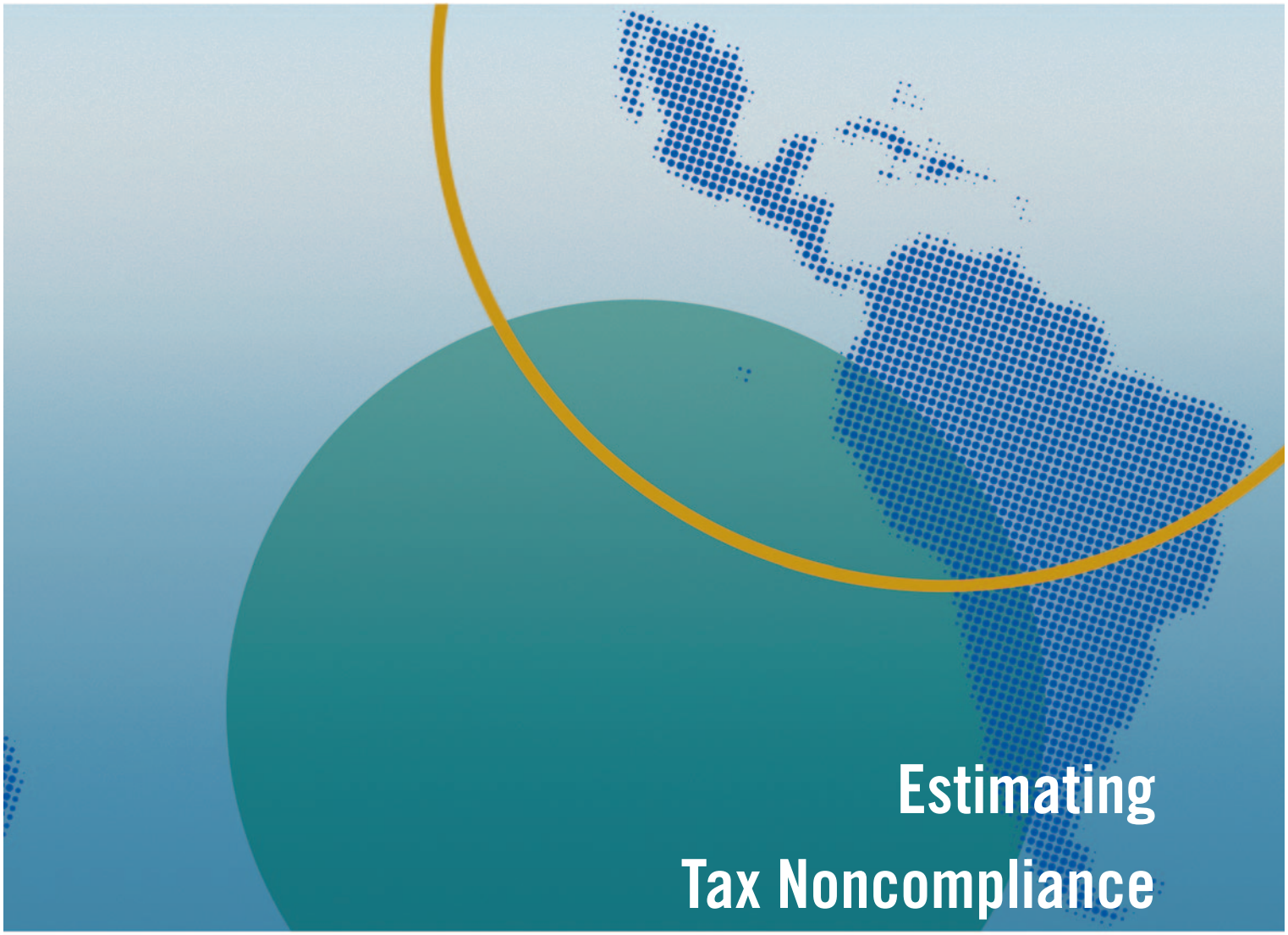

Estimating Tax Noncompliance in Latin America: 2000 – 2010

On behalf of BMZ
Federal Ministry for Economic Cooperation and Development

Centro Interamericano de Administraciones Tributarias - CIAT

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Miguel Pecho Trigueros
Fernando Pelaez Longinotti
Jorge Sánchez Vecorena

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Abbreviations

Abbreviation	Description
AEAT	Spanish Tax Administration Agency
AFIP	Federal Administration of Public Revenues of Argentina
CAN	Andean Community of Nations
CIAT	Inter-American Center of Tax Administrations
CIT	Corporate Income Tax
DEI	Honduras Tax Agency
DGI	Uruguay Tax Agency
DGI	Panama Tax Agency
DGI	Nicaragua Tax Agency
DGII	Dominican Republic Tax Agency.
DGII	El Salvador Tax Agency
DGT	Directorate General of Taxation, Ministry of Finance of Costa Rica
DIAN	Directorate of National Taxes and Customs of Colombia
ECLAC	Economic Commission for Latin America and the Caribbean
GDP	Gross Domestic Product
GTMGT	Tax Expenditures Measurement Working Group
GVA	Gross Value Added
ICEFI	Central American Institute for Fiscal Studies
IDB	Inter-American Development Bank
IFB	Brazil Tax Agency
IFS	Institute for Fiscal Studies
IMF	International Monetary Fund
IRS	Internal Revenue Service – USA Tax Agency
LA	Latin America
OECD	Organization for Economic Cooperation and Development
OS	Operating Surplus
PIT	Personal Income Tax
SAT	Guatemala Tax Agency
SAT	Mexico Tax Agency
SENIAT	National Integrated Customs and Tax Administration of Venezuela
SET	State Taxation Sub-secretary of Paraguay
SII	Internal Revenue Service of Chile
SIN	National Tax Service of Bolivia
SRI	Internal Revenue Service of Ecuador
SUNAT	National Customs and Tax Administration (Peru)
TA	Tax Administration
WB	World Bank

Introduction

There is consensus on the need of Latin America to increase its tax collection levels for the State to adequately provide services demanded by citizens. To achieve this, it would be of great help to effectively broaden tax bases and to reduce high levels of tax noncompliance.

The tax system collection capacity of a country as a whole is subject to taxpayers' behaviors and attitudes towards paying taxes. Paying taxes is not something that appeals to people and in this sense, noncompliance is a universal phenomenon that not only directly affects revenue sufficiency, through reduced tax revenues, but also impacts on income distribution and equity thus limiting every country´s development and sustainable economic growth. Moreover, tax noncompliance also represents unfair market competition in the economy and it is therefore a phenomenon that should not only be the responsibility of the TA but of the State as a whole, and of the entire citizenship.

Efforts seeking to minimize and/or eliminate this phenomenon are diverse and should probably try to be more consistent over time. Achieving greater social acceptance of taxes, governments' legitimacy faced by the population, firm, fair, clear and simple tax and regulatory frameworks, together with strong and transparent TAs, among other factors, certainly favor the improvement of tax compliance levels in every country.

Knowing the extent of the tax noncompliance problem, and its evolution over time, as well as to characterize in detail its components and try to understand the implicit subjectivity in the various forms in which it occurs, allows better orientation of the actions needed to face it. It is about understanding the importance of measuring in order to know and be able to adequately react to this phenomenon which creates difficulties for the State since it limits the available resources to execute its several policies.

Since the 70´s there have emerged different methodologies for measuring tax noncompliance, all of which, with the passing of the years, have been applied by several developing countries considering to their specific reality and the information available. The present study discusses these methods and points out their advantages and disadvantages, while highlighting the major obstacles to overcome in order to apply them. Additionally, quantitative information on tax noncompliance in Latin America is presented obtained from recent works, as well as some of our own measurements in order to assess this phenomenon in the period 2000-2010.

Considering CIT lower measurements for countries in Latin America, new tax noncompliance measurements for this tax are presented, by using National Accounts. These results complement existing measurements by including new countries that did not have previously known measurements, while allowing consistency of results for those countries that already had measurements although few and/or unique compared to having a time series.

In developing the aforementioned measurements, the authors also present components of the so called CIT structural tax collection covering the real tax collection, tax expenditures and tax noncompliance. The study highlights the importance of having measurements of tax expenditures in several countries; their limited availability, as well as the poor quality of their National Accounts, constitutes one of the main obstacles to perform the proposed measurements.

The authors take advantage of new information from the TAs management derived from a study carried out by IDB, CIAT and CAPTAC-DR to provide other tax noncompliance estimates from the estimation of the gaps of registry, tax return, tax payment and tax veracity. It is noteworthy that these calculations are uncommon due to the limited information on tax management, and therefore becoming an added value of the study.

Finally, some conclusions and recommendations are presented mainly in the line to foster the development and standardization of similar methodologies as well as for the dissemination of the

results of tax noncompliance measurements as this will allow scaling the phenomenon in most countries enabling to choose the most effective measures and actions that could contribute to its reduction.

1. Importance of measuring tax noncompliance

As noted above, understanding the scale of the tax noncompliance phenomenon and its evolution over time, both to characterize in detail its components and to try to understand the implicit subjectivity in the various forms in which it manifests, allows to better target actions needed to face it.

The different studies that have tried to attempt measuring this phenomenon have started with an attempt to define it. There are tax noncompliance definitions as restricted as only considering noncompliance as those events in which a certain tax obligation has been determined but has not either declared nor paid, as well as broader definitions that relate noncompliance to the entire informal economy. Other definitions also restrict the concept, associating it solely with illegal and deliberate actions aimed at reducing the tax burden and/or with actions that result in non-payment of a tax, but without mediating the subject's intentionality.

The conceptual definition used by each work is often linked to the particular measurement technique used since, as it will be seen later, the different existing techniques measure compliance gaps with different approach. Thus, while some studies are based on external sources (indirect methods) and can calculate a gap that correspond to tax avoidance, informality and even tax payment default or part of these; there are also other studies, particularly those conducted with tax information from the TA (direct methods) that can calculate tax noncompliance resulting from tax return non submission (tax return gap) and/or sub assessment (veracity gap), but fail to include the loss in tax revenue resulting from the activities operating in absolute informality.

In general, tax noncompliance can be understood as all actions, deliberate or not, resulting in a wrongful elimination or reduction of tax liabilities. These actions are of all types and are related to several factors such as the existence of a well-developed and entrenched informal economy, an inadequate regulatory structure, a heavy tax burden, taxpayers' deficitary financial situation, the social acceptance or indifference towards the tax noncompliance phenomenon, lack of legitimacy of the government in power and little confidence in its actions, the partial or total lack of knowledge of legal obligations (low tax culture), among others.

In general, governments and TAs allocate significant resources to fight tax noncompliance, often getting results that are not proportional to the effort involved and that may be the result of a wrong orientation. That is why the quantification and characterization of this phenomenon is a useful tool as a first instance indicator to guide tax examination activities as well as to assess the results of past actions in that direction and their impact on tax behavior. This indicator can also be used to evaluate the performance of the TA (efficiency or performance indicator), and in that sense it is increasingly common to set management goals towards the reduction of this indicator, which are subject to periodic evaluations.

The importance of progressing towards measuring tax noncompliance is not something new for CIAT, since its member countries have always been recommending TAs to be involved in measuring this phenomenon. As an example we can mention the final resolutions of recent General Assemblies:

Resolution of the 44th CIAT General Assembly, Uruguay, 2010 - "The Role of Tax Administrations in the Global Crisis".

"Consider the possibility to undertake actions, if it is under their responsibility or to collaborate with and support the relevant organizations in developing instruments for measuring the tax gap to

actually determine the efficiency and effectiveness of the tax administrations: (..) 1. Developing and applying, if it is under their responsibility, instruments and methodologies for measuring tax evasion, as one of the important actions aimed at increasing the tax bases."

´CIAT 45th General Assembly Resolution, Ecuador, 2011 - "Tax morale as determining factor in improving the efficiency of the Tax Administration."

"To determine the scope and objectives of the tax morale concept: (..) 3. Tax administrations should consider implementing methodologies aimed at measuring taxpayer tax morale and taxpayers' level of compliance, evaluating the results and determining appropriate responses to improve both phenomena. "

Resolution of the 46th CIAT General Assembly, Chile, 2012 - "Improving the performance of the Tax Administration: Evasion control and taxpayer assistance."

"Improving the effectiveness and the results of tax control programs: (..) 2. Performing studies and technical analyzes that will allow to establish the levels of sectorial evasion in order to design and to apply specific programs for high-risk groups of taxpayers. "

2. Measurement methodologies

The existing literature regarding tax noncompliance and methods to measure it have grown over the last twenty (20) years. This literature is closely related to the measurement of informality and / or the underground economy.

Taking as reference the work of Alm (2011), it can be said that over time the developed literature have consolidated two different approaches to measuring the tax noncompliance phenomenon; these are the traditional approach and the modern approach.

Traditional approaches, on one hand, are about taking advantage of TAs information (direct methods) as the tax returns, audits, information on tax amnesties, among others, and on the other hand, they take advantage of macroeconomic aggregates data, Household Surveys data and monetary variables, among others, to measure potential tax bases (indirect methods).

Meanwhile, in modern approaches researchers have resorted to new and ingenious alternatives to measure tax noncompliance, either through controlled laboratory and/or field experiments, perception surveys or by using sophisticated econometric models.

The aforementioned work allows identifying more than twenty (20) measuring methods, mostly of the traditional approach (15). Of these, indirect methods are predominant (9).

While sizing the tax noncompliance phenomenon is very important, it must be kept in mind that the above methods are approximations and therefore cannot be considered as accurate measurements, because there are problems covering the availability of information, its quality and reliability, including also measurement bias of some of those techniques. For this reason, it is advisable to take the obtained results as a reference and try to assess their consistency with other sources of information or focus on their evolution over time.

The following pages of the present document review the characteristics of the most representative methods, as well as their advantages and disadvantages. Once the review is done, the valid question that arises is: which of these is the most appropriate method to measure tax noncompliance? There is no single method that is the best suited. The use of one or the other will

depend on the economic characteristics, available resources and context in which they apply and must often be adapted to the reality of the country under study.

2.1. Traditional approaches

They are the oldest, the most disseminated and therefore the most widely used to measure tax noncompliance.

Direct Methods

They mostly use information from the TA. The results from a sample of taxpayers are extrapolated to estimate results for the whole population under study. The most representatives are:

a) Using random audits: It consists in auditing a sample of taxpayers´ tax returns and to determine their level of noncompliance. The peculiarity of this method is that they are not official audits, i.e. not derived from the TA actual examination work. It involves high costs for the TA and its accuracy depends on the effectiveness of the audit (to detect all unreported income). One issue to consider is that it ignores the informal economy.

b) Use of official audits: It consists in using the results of regular examinations performed by the TA within its standard control work, so from these they determine the tax noncompliance levels. It faces sampling bias, as it is subject to the actual TAs audit programming, which in itself is already focused towards most non-compliant taxpayers. Its accuracy depends on the effectiveness of the actual examination carried out (to detect all unreported income). It does not consider the informal economy, either.

c) Information from tax amnesties: It consists in estimating tax noncompliance from taxpayers' information benefiting from tax amnesty programs implemented in countries where, to access the benefit (mainly suspension/reduction of fines and/or interest) taxpayers must comply with assessing unreported taxes, which provide a direct measure of noncompliance. It's low cost and easy to calculate. Its coverage may not be statistically representative because not all taxpayers choose to benefit from the amnesty. If amnesties are rare, calculations cannot be made.

d) Fixed Point Method: It originates from the actual examinations actions of the TA and it estimates the turnover level and/or volume of transactions that a certain taxpayer has, from direct observation by an audit agent throughout a normal business day. From the estimated turnover, the corresponding taxes can be calculated and these are compared with the taxes actually paid in order to identify the tax compliance gap. It is a relatively simple method. It has a high cost for the TA (man hours and coverage). It may not be statistically representative if current examination actions focus only on one particular sector or sectors.

Indirect Methods

They use data from macroeconomic aggregates and third-party information, exogenous to the TA, that allow approximating potential tax bases, and from these, they indirectly reach noncompliance. The following main ones can be mentioned:

a) Theoretical Potential using National Accounts: It consists in using National Accounts data to determine the potential tax base as well as the potential or theoretical tax, and then compare it with the effective tax collected, thus determining the amount of tax noncompliance. Depending on the tax evaluated, the base information used is different.

To estimate VAT noncompliance, the tax base can be estimated either by the expenses side or by the production side of the national accounts. In the first case, the tax base is estimated from households' final consumption and intermediate consumption of enterprises that sell exempt goods. From this point, potential tax is derived and then compared with the effective collection to obtain the noncompliance level, by difference. In the second case, GDP data can be used as an approximation to the value added in the economy and proceed by adding or subtracting items (imports, tax expenditures, etc.) that allow to reach the potential tax base (value added taxed of the economy).

To estimate CIT noncompliance, the most common way is to estimate the potential base from Operating Surplus, making the corresponding adjustments such as monetary correction, surplus of exempt activities, accumulated losses from previous years, among others, and that way be able to determine the tax base and then the potential tax which is compared to the effective tax to determine the estimated tax noncompliance level.

This method has become the international standard. Its use being fairly widespread, it allows comparisons between countries. On the other hand, it faces problems of information availability and reliability (usually frequent underestimation or sometimes overestimation of macroeconomic aggregates). Moreover, as mentioned above, it is necessary to make adjustments that may be of medium complexity.

b) Theoretical potential using household surveys: It consists in obtaining estimates of household income, and then compare them with the income reported to the TA and determine the existing gap and from it the level of tax noncompliance. It allows to adequately estimating PIT noncompliance. It is accessible and affordable to the extent that they have the information from household surveys (micro data). It is not complex, but laborious. It is subject to data reliability (underreporting, not answering surveys, etc.).

c) Monetary Methods: They consist in estimating the production value from the volume of money transactions (using the Fisher equation) and then compare it with the official production of National Accounts. It is widely used to measure informality, but from this, tax noncompliance can be inferred. Alternatively, the demand for money is estimated from conventional variables (income, interest rate, etc.) and from variables that may encourage tax noncompliance (the tax burden, complexity of the tax system, some regulations, among others). Any excess in the demand for money not explained by conventional variables would be attributed to the underground economy.

d) Method using the input-output relationship: It consists in using input-output ratios to estimate the size of the production which is then compared with the activity recorded in National Accounts The difference is attributed to unreported activities and from this noncompliance is estimated. An example is the case of electricity consumption and the level of output that is generated. The method necessarily requires having input-output ratios.

e) Tax effort coefficients: This ratio is calculated as the ratio between revenues received and the tax capacity; which is defined as the maximum tax revenues that a country can collect given their economic, social, institutional and demographic characteristics. The coefficient itself does not provide a direct tax noncompliance measure but its follow up over time can give an approximation of its evolution.

It is noteworthy that having a low tax effort ratio does not necessarily mean that countries have low levels of tax compliance but simply that they have chosen a small government with low level of public services. Some calculations can become complex as in the case of the so-called "tax capacity" which requires econometric models that measure the tax border.

2.2. Modern approaches

They are new approaches that have emerged from recent studies. Some of these methods allow identifying and evaluating the factors that explain the behavior of tax evaders and how they react to their changes. Some of these new approaches are:

a) Panel Data: It consists in calculating tax noncompliance from the follow-up of submitted tax returns to the TA for a particular group of taxpayers. It uses econometric methods to examine the determinants of tax noncompliance and how this varies with changes in the audit probability or the rate of the penalty or fine, for example.

To the extent that the evaded income cannot be directly observed, it can be inferred that the response will be similar to that of the reported income with respect to those variables. In this sense reported income can be used as a proxy or an indirect measure of evaded income and from it a measure of tax noncompliance can be obtained.

b) Controlled field experiments and laboratory: These methods are useful for explaining changes in evaders' behavior due to different stimuli. They are carried out through random communications to taxpayers (field experiments) or also by conducting direct experiments with groups of people of different educational levels (students, graduates, professionals) who are brought together to participate in pre-planned game-type dynamic where fictitious activities are simulated and tax behavior is evaluated (laboratory experiment).

Regarding laboratory experiments, these were first developed in the 80's influenced by psychologists like Paul Webley who contributed to increase the literature on behavior analysis related to tax compliance.

Many experiments initially focused on evaluating the effect of deterrents such as fines and audit ratios, and more recently leaving those factors constant and verifying the relevance of social and institutional factors such as tax morale, social sanction, among others as said in Torgler (2003)'s work.

c) Use of Surveys: It consists in the use of perception surveys to identify the motivations of taxpayers to evade their tax obligations. It is more about collecting relevant information that allows identifying and addressing the factors that influence that behavior. It is a relatively simple method.

Surveys have high cost and they lack of a direct measure of tax noncompliance; they are perceptions and subjected to the reliability of the data collected (underreporting, no answer). To be successful surveys must ensure privacy and the statistical representativeness of the sample of respondents.

d) Declared expenditure-based Method: Their greater use lies in measuring PIT noncompliance. Under the consumption-based method, an expenditure function is estimated from household surveys and it is used to determine the potential income associated with the declared expenditure. This way reported income is compared with estimated income to obtain the level of tax noncompliance.

e) Use of Econometric Models: It involves using econometric models that allow considering simultaneously several explanatory variables for informality and, from this, estimate tax noncompliance levels. An example is the model called "dynamic of multiple indicators and multiple causes" or DYMIMIC which has two parts: one model linking unobserved variables with observed indicators and one structural equation model that specifies causality relationships between unobserved variables. It requires a lot of information and advanced expertise (statistics and econometrics).

3. Measurements for Latin American countries

Tax noncompliance measurement had a major boost in the early 90s in developing countries, in a context in which it was recognized that reducing the tax gap was a way to reduce their large fiscal deficits. Latin American countries were not unaware to this concern and interest and several studies began to emerge, mainly from international agencies, universities and other private entities.

More recently, TAs began to get involve with these activities, recognizing the fact that having measurements for tax noncompliance constitutes a necessary tool for their management, and even for government's management, to provide support for better control actions and scheduling strategies and plans.

The information obtained from these measurements allows TAs substantive processes to be addressed properly, generating positive results and thus contributing to easily comply with the basic principle of sufficiency present in all tax system. This means having a broad tax base and significant compliance levels.

However, not all Latin American TAs perform these measurements today, which contrasts with the higher degree of professionalization experienced by many of them (for example, they constituted or strengthened tax study departments responsible for this type of tasks) and access to more and better quality tax information and statistics in general.

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Table No.1
Measurement of Tax Noncompliance
by TAs in Latin America

	¿Do they measure or have measured noncompliance?	¿Are measurements periodic?	¿Are results made public?
Argentina 1/	YES	YES	YES
Bolivia	NO	-	-
Brazil	NO	-	-
Chile	YES	YES	YES
Colombia	YES	YES	YES
Costa Rica	NO	-	-
Ecuador	YES	NO	YES
El Salvador	NO	-	-
Guatemala	YES	YES	YES
Honduras	NO	-	-
Mexico 2/	NO	-	-
Nicaragua	NO	-	-
Panama	NO	-	-
Paraguay	YES	NO	NO
Peru	YES	YES	YES
Dominican Rep.	YES	YES	YES
Uruguay	YES	YES	YES
Venezuela	NO	-	-

1/ AFIP measurements were only made periodically until 2008 and with appropriate dissemination of the results.
2/ By law, the SAT delegates the processing of these measurements to the country's universities (Art. 29 of the SAT's Law).
Source: CIAT, Tax Authorities
Prepared by: author

As a whole it has been identified that in 9 of the 18 countries analyzed, the TAs have experience in tax noncompliance measurement for at least one tax. When this has not been the case, other government agencies, universities, international organizations or private institutions have conducted measurements for countries and released the results in papers or seminars.

When TAs are involved in these tasks, it is easier for noncompliance measurements to become a periodic work, usually on an annual basis, helping to track the evolution of this phenomenon, so results of the actions implemented for its reduction can be evaluated.

TAs usually performs mainly noncompliance estimates for VAT; besides, they do it globally. In some cases, sectorial VAT or CIT estimates are reserved only for internal use. Noncompliance in other taxes is hardly addressed.

Regarding the dissemination of results, it is worth noting that to the extent that these data are estimated and quite sensitive to public opinion, TAs usually do not disseminate them very much, because they end up being a performance indicator of their own management.

Despite this, the dissemination of the results would generate a risk effect among those who do not comply since they would perceive that the TA already has sized their activities, the next step being to implement actions to fight them.

The dissemination is usually carried out through official statements or press releases from the higher authorities and in few cases through the institutional websites. For example, only in 6 cases complete studies could be found (methodology included) available to general public.

In the present study we have reviewed works that measure tax noncompliance for countries in Latin America, having collected quantitative data that will be presented later. We have only analyzed the case of VAT and CIT, which are the most important taxes in the region and which collections are the pillars of the revenue generated by tax systems.

In every case we have sought to prioritize only the most recently published work and focused on calculations for the period 2000-2010, although, in some countries important studies may exist that also sought to approximate the magnitude of tax noncompliance for previous years.

3.1. Measurements using National Accounts

As mentioned above, the theoretical potential method using National Accounts seeks to determine potential tax base using the balances of some National Accounts that have an association with the tax base. Thus, to study VAT noncompliance if taken from the expenditure side, it is necessary to use data from household consumption as well as government consumption. These studies also need to access to the input-output matrix, to learn the taxed intermediate consumption of sectors or activities trading exempted goods. It must be recalled that in order to measure noncompliance the production side can also be an option.

In the case of CIT, the most common practice is to determine the potential taxation base from the gross operating surplus. The application of the technique for this tax provides greater difficulties than in the case of VAT, because of the bigger tax adjustments, special schemes and diversity of deductions allowed, forcing a greater number of adjustments to the base of comparison. These specificities require that for both the VAT and the CIT, several studies based on National Accounts must resort to tax information in order to construct the theoretical potential, which even if it contaminates the results, is often essential to make comparable the potential tax and the tax actually generated / collected in the study period.

Some of the most representative results obtained from recent work for countries in Latin America and that use this method are:

Argentina: CIT and VAT noncompliance estimates have been identified. The works of Cetrángolo y Gómez Sabaini (2010) and those from AFIP really stand out. The first author measures the CIT noncompliance and finds a level of 49.7% for 2003. The second author focuses on VAT and includes several periods (2000-2004, 2005, 2006, and 2007). The noncompliance average reaches 32.4%, with a minimum of 19.8% with a maximum level of 42.9%. Since 2008, AFIP has reported that it stopped measuring tax noncompliance.

Bolivia: Only VAT noncompliance estimates have been identified. Gómez Sabaini and Jiménez (2011) report a 29% of noncompliance for this tax in 2004.

Chile: CIT and VAT noncompliance estimates have been found. Jorratt (2010) and SII works stand out. In the first case, CIT noncompliance is evaluated for the 2003-2006 period, obtaining a level of 33.1%, with a minimum of 25.2% and a maximum of 48.2%. The second case highlights the SII efforts for VAT periodic measurement. The latest work covering the 2000-2010 period yields a result of 14.5%, with a minimum of 8% and a maximum of 21%.

Colombia: Noncompliance measurements have been identified for CIT and VAT, mainly from the DIAN. In the case of CIT, for period 2000-2009, noncompliance was estimated in 32.2% on average. In the case of VAT, estimates have been identified for period 2005-2010; and for 2000-2009 period an average of 27.6%.

Costa Rica: Measurement studies for VAT and CIT noncompliance were identified, emphasizing those developed by the General Comptroller of the Republic. For the period 2000-2008 there is an average VAT noncompliance of 24.6% with a minimum rate of 18.2% to a maximum of 28.6%. For 2000-2007 periods, there is a CIT noncompliance average of 72.4% with a minimum of 64.3% and a maximum of 77.5%.

Dominican Republic: There have only been found information on VAT noncompliance, highlighting DGII periodic estimates that for period 2000-2010 found a 33.6% noncompliance average.

Ecuador: Works on VAT and CIT noncompliance measurements have been identified. In the case of CIT, for period 2004-2006 Roca (2010) found a noncompliance average of 63.7% and SRI work for period 2003-2005 found a noncompliance average of 61.3%. In the case of VAT, Gomez Sabani and Jimenez (2011) report a noncompliance of 21.2% for 2001.

El Salvador: CIT and VAT noncompliance estimates have been identified. For CIT, Cabrera and Guzman (2010) found a noncompliance level of 51.0% for 2005, while for the VAT, Gomez Sabaini and Jimenez (2011) report a 27.8% noncompliance level for period 2005-2006.

Guatemala: Works on VAT and CIT noncompliance measurements have been identified. In the case of CIT, Cabrera (2010) found a 62.8% noncompliance level for 2006. For period 2005-2009 the SAT found a noncompliance level of 62%. In the case of VAT there is information on periodic measurements calculated by the SAT. In this case there is data on noncompliance for period 2001-2010 with an average of 34.2%.

Mexico: Works on VAT and CIT noncompliance measurements have been identified. Alvarez (2010) on CIT noncompliance measurements found a level of 36.0% for period 2002-2004; and ITAM (2006) presents a time series for period 1996-2004, obtaining an average noncompliance of 25.2%. With regard to VAT, periodic surveys commissioned by the SAT to universities report a noncompliance average of 21.7% for the 2000-2008 period.

Nicaragua: Only information on VAT noncompliance has been found. Sabaini Gomez and Jimenez (2011) report a noncompliance level of 38.1% for 2006.

Panama: Only information on VAT noncompliance has been found. Sabaini Gomez and Jimenez (2011) report a noncompliance level of 33.8% for 2006.

Paraguay: Only information on VAT noncompliance has been found, highlighting SET estimates for period 2007-2010, which has a noncompliance average of 41.0%.

Peru: Works on VAT and CIT noncompliance measurements have been identified. In the case of CIT, Arias (2010) work finds for 2006 a noncompliance level of 51.3% and a SUNAT study for 2007 finds a level of 52%. In the case of VAT, Gomez Sabini and Jimenez (2011) report a noncompliance of 37.7% for 2006, while the periodic SUNAT measurements find a noncompliance average of 41.4% for period 2001 – 2010.

Uruguay: Only information on VAT noncompliance has been found, highlighting DGI study. The DGI periodically disseminates VAT noncompliance estimates, with the most recent one covering period 2000-2010, which has a noncompliance average of 28.8%. Note that in the DGI there are experiences with CIT estimates; however, since they are not public, they have not been considered in this survey.
Recent noncompliance measurements have not been identified under this methodology for the case of Brazil, Honduras and Venezuela.

The most common obstacles found by those who made CIT estimates has been the limited availability of National Accounts, especially referring to immediate past periods. This has led for several studies to present noncompliance results for quite distant periods, which somehow weakens the ability of the results to guide the TA's control actions.

To try to remedy this weakness, some studies estimate a value of Operating Surplus and Mixed Income for (the) last (s) period (s) of analysis which they usually rely on accounts from previous periods that are updated by the evolution of some explanatory variable(s), or maintaining constant the relationship among them; e.g. the relationship between Operating Surplus and GVA in a given year is then applied to GVA's last current value, which is generally available for immediate recent periods.

While the results of past periods are relevant for understanding the trend and composition of the phenomenon in the past, they do not provide information about the most recent events, so it can be said that this is one of the major limitations of this technique. The solution to estimate the Operating Surplus for most recent period is intended to diminish this deficiency, but this also requires using an estimate of the base variable, which lowers the quality of results.

Table No. 2
VAT Noncompliance Measurements
% of Potential Tax Collection

	Average 2000-2010			Total All Sources			
	TA	Other entities	Total All Sources	2000-05 Average	2006-10 Average	Max.	Min.
Argentina	26.7	44.0	32.4	36.4	20.5	42.9	19.8
Bolivia	n.a.	24.7	24.7	24.7	n.a.	29	20.3
Brazil	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Chile	14.5	11.0	14.5	16.1	12.6	21.0	8.0
Colombia	30.1	22.2	27.6	30.7	23.8	33.2	22.0
Costa Rica	n.a.	24.6	24.6	26.8	20.1	28.6	18.2
Ecuador	28.2	21.2	28.3	28.3	n.a.	31.8	20.7
El Salvador	n.a.	27.8	27.8	n.a.	27.8	27.8	27.8
Guatemala	34.2	36.6	34.3	35.2	33.3	39.9	27.2
Honduras	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Mexico	n.a.	22.8	22.8	24.8	18.8	28.7	17.8
Nicaragua	n.a.	38.1	38.1	n.a.	38.1	38.1	38.1
Panama	n.a.	33.8	33.8	n.a.	33.8	33.8	33.8
Paraguay	41.0	63.0	45.4	63.0	41.0	63.0	33.6
Peru	41.4	37.7	41.3	45.8	36.8	49.1	32.7
Dominican Rep.	33.0	31.2	33.0	36.9	28.4	42.8	24.9
Uruguay	28.8	34.2	28.3	35.1	20.2	39.4	15.0
Venezuela	n.a.	66.0	66.0	66.0	n.a.	66.0	66.0
Simple Average	**30.9**	**33.7**	**32.7**	**36.1**	**27.3**	**66.0**	**8.0**

Source: CIAT, Tax Authorities, Several Works
Prepared by: author

Considering all VAT calculations for Latin American countries, Table No.2 shows that, for TA's studies, noncompliance measurements for period 2000-2010 reach an average of 30.9%. This figure rises up to 33.7% in the case of measurements made by other entities. Considering all of them, the VAT noncompliance estimate slightly increases up to 32.7%. It also shows the minimum and maximum existing measurements ranging from 8% to 66%.

Meanwhile, based on TAs measurements Table No.3 shows an average CIT noncompliance of 46.0% in Latin America for period 2000-2010, and of 50.1% according to calculations of other agencies. Considering all existing measurements, there is a noncompliance average of 49.6% for period 2000-2010. It is noted that there are less available recent measurements for CIT (10 countries) than for VAT (16 countries), although gradually more results are being found.

Table Nº 3
CIT Tax Noncompliance Measurements
% of Potential Tax Collection

	Average 2000-2010			Total All Sources			
	TA	Other entities	Total All Sources	2000-05 Average	2006-10 Average	Max.	Min.
Argentina	n.a.	49.7	49.7	49.7	n.a.	49.7	49.7
Bolivia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Brazil	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Chile	22.1	34.3	33.1	34.1	30.0	48.2	25.2
Colombia	32.4	31.3	32.4	34.6	29.0	38.7	27.0
Costa Rica	n.a.	72.4	72.4	74.4	66.6	77.5	64.3
Ecuador	61.3	56.2	56.1	54.3	63.5	65.3	42.0
El Salvador	n.a.	52.4	52.4	55.2	47.0	58.0	47.0
Guatemala	62.0	66.6	65.2	67.3	62.5	71.5	60.2
Honduras	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Mexico	n.a.	29.7	29.7	31.0	23.4	36.6	23.4
Nicaragua	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Panama	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Paraguay	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Peru	52.0	62.5	59.0	79.1	49.0	79.1	46.0
Dominican Rep.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Uruguay	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Venezuela	n.a.	45.6	45.6	45.6	n.a.	45.6	45.6
Simple Average	**46.0**	**50.1**	**49.6**	**52.5**	**46.4**	**79.1**	**23.4**

Source: CIAT, tax authorities, several works
Prepared by: author

3.2. Experiences with other methods

To measure tax noncompliance in the region, it has been verified that there is a lesser use of other traditional approach methods, different from those based on National Accounts. Moreover, it has been verified the existence of few measurements using some of the modern approach methods presented in this document.

For methods that calculate the theoretical potential based on Household Surveys, ECLAC (2010) work is highlighted, covering Chile, Ecuador, El Salvador, Guatemala, Mexico and Peru. These estimates are focused on PIT.

For Chile there is a noncompliance of 46.0% in 2003, from the use of the so-called Socioeconomic Characterization Survey (CASEN). For Ecuador a noncompliance of 58.1% is estimated for 2005, based on the Living Conditions Survey (LCS). For El Salvador, a noncompliance of 36.3% is estimated for 2005, from the use of the Multipurpose Household Survey (EHPM). For Guatemala there is a noncompliance of 69.9% for 2006, which uses the National Survey of Living Conditions (LSMS). For Mexico, a noncompliance of 38.0% is estimated for 2004, 36.4% for 2005 and 34.7% for 2006. All this is from the information of the National Household Income and Expenditure Survey (ENIGH). Finally, for Peru, there is a noncompliance of 32.6% for 2006, according to information from the National Household Survey (ENAHO).

For measurements using monetary methods, works from Schneider that measure the informal economy. Schneider and Enste (2000) present measurements for various countries, including some in Latin America, by using the demand for money method. Thus, this method estimates the size of the informal economy, for example, for Mexico in 33% of the GDP for period 1989-1990.

On the other hand, Alm and Embaye (2011) also apply this method to estimate the size of the informal economy in 111 countries for the 1990 to 2006 period, including several Latin American countries, such as Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, Dominican Republic, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Paraguay, Peru, Uruguay and Venezuela. These results highlight the high levels of informality expected in Central American countries such as Nicaragua (52.4%), Honduras (47.6%) and Guatemala (46.4%). There are also high levels of informality in countries like Bolivia (44.9%), Colombia (44.8%), Paraguay (43.0%) and Peru (43.0%). On the other hand, countries with lower levels of informality were Chile (26.3%), Argentina (27.2%) and Costa Rica (28.9%).

For measurements using the input-output relationship, only Schneider and Enste (2000) as quoted above, provide estimates using physical inputs for some Latin American countries. The authors use electricity consumption as a better indicator of the size of economic activity and on that basis makes their estimates on the informal economy size. Results are presented for period 1989-1990, expressed as a percentage of GDP: Brazil (29.0%), Chile (37.0%), Colombia (25.0%), Costa Rica (34.0%), Guatemala (61.0%), Mexico (49.0%), Panama (40.0%), Paraguay (27.0%), Peru (44.0%), Uruguay (35.2%) and Venezuela (30.0%). From these calculations a closer estimate of tax noncompliance levels in these countries can be reached.

For calculations using the tax effort ratio, the Fenochietto and Pessino (2010) work is highlighted, which estimates this indicator for 96 countries in the world, by using an econometric model which estimates stochastic frontiers, in this case the border tax, with a panel data for period 1999-2006. Results for Latin American countries have a tax effort ratio ranging between 0.59 and 0.63 mainly for 2006. The countries with the highest ratio are Brazil (0.97), Uruguay (0.87), Chile (0.71), Colombia (0.71) and Costa Rica (0.67). Meanwhile, countries with the lowest estimated tax effort are Guatemala (0.37), Panama (0.47) and Venezuela (0.45).

For measurements using perception surveys, the Latinobarometer effort is highlighted as well as works in Ecuador and Peru.

Latinobarometer is a public opinion survey annually conducted in 18 countries in Latin America that investigates the social, economic and democratic institutions through indicators of public perception, attitudes and behavior[1].

Within the Democracy chapter, and Civic Culture and Policy subchapter there are some questions about citizenship and social fraud that relate to the perception of the importance of taxes, the tax evasion justification scale, as well as public perceptions on how much other pay or comply (evading behavior).

Latinobarometer enables online analysis of the results, which constitutes a useful input for any user to make the desired analysis. This way, responses may be observed throughout the series of surveys on how much they believe the others comply. Online analysis of the survey series yields the following results by country.

[1] According to the methodological notes accompanying the study, 20,000 interviews with custom samples are performed (probability samples of 3 or more stages) from 1000 to 1200 representative cases of 100% of the adult population for 18 countries in Latin America. The methodological notes can be access at: http://www.latinobarometro.org/latino/LATContenidos.jsp

For example, it can be seen that over the years, the average of this response has not changed much, starting from 49.8% of perceived noncompliance in 1998 to 47.7% in 2010. It is noted that, regarding the consultation conducted in 2009, in 7 of the 18 countries that assessment increased, while in 11 of them the noncompliance perception of others has decreased.

Other studies using perception surveys are conducted by SRI of Ecuador and SUNAT from Peru. In the first, Carrasco (2010) found that 71.3% of Ecuadorians believe that high-income people are more likely to evade. The data refers to 2008. In the second one, SUNAT (2011) found that 75.0% of Peruvians show high levels of tolerance to evasion; however a fairly high percentage of the population recognizes that doing this is bad (92.0%).

In the case of measurements using field experiments and laboratory, an application has been identified in Costa Rica conducted by Benno Torgler (2003) and it is a laboratory experiment on tax compliance not using students as it is usually done, but with real taxpayers and looking to measure even beyond the classic deterrence effect that fines, penalties and probability of detection have.

In their experiment they hold these factors constant and measure the effect of the fiscal exchange (public goods and services received against tax payments made), persuasion of moral rules, rewards for complying, among others, finally concluding that these have a positive effect on compliance.

The experiment used 37 volunteers from different professions and taxpayers from a villa in Costa Rica; they were first time participants in these experiments. Each session lasted about 40 minutes and they received between US$ 5 and US$ 15 depending on the amount of money they assessed. No communication was allowed between participants and real money was provided, carrying out only one round of experiment in which they are informed that they must give back a percentage of the money received and then they have to decide how much to give or assess.

Two groups were divided into sub groups, so as to have a control group, a group of fiscal exchange, a group of moral dissuasion, and one for positive rewards; each group received between 1500 colones and 3000 colones. The level of compliance of groups 2 to 4 was compared with the first group, the control group. Regarding the positive rewards, each audited subject found to be honest received 500 colones as a reward for the low income group or 1000 colones for the high-income group.

The results showed that the “moral dissuasion” group had a higher compliance ratio than the tax exchange group, and that no one tried to evade in the positive rewards group. In general what was found is that the results are in line with those carried out with students, and that tax compliance could be greater than that inferred by the classical expected utility model.

Finally, in terms of measurements using sophisticated econometric models, a work by Schneider, Buehn and Montenegro (2010) estimates the size of the informal economy and, from this, the percentage of tax evaded. It covers 162 countries for the period 1999 to 2007. Specifically it takes into account multiple factors to explain the existence and growth of the informal economy as well as the multiple effects of the informal economy over time. They use an econometric model called "Multiple Indicators, Multiple Causes (MIMIC) or also called multiple indicators and multiple causes dynamic, which is a particular type of the so-called structural equations model (SEM).

In this model the informal economy is the unobserved variable that is analyzed with respect to its relationship with other observed variables, using the covariance matrix. Thus, the model in a first step seeks to confirm the hypothesis of relationships between the informal economy and its variables or determinant so that once relationships are identified and parameters are estimated, these results are used to calculate an index.

The results obtained by the authors found a level of informality that has remained more or less constant throughout the period of analysis at an average of 34.2% for all countries; 36.3% for developing countries and 33.5% for OECD countries. Among the Latin American countries, the highest levels of informality are those of Bolivia (66%), Panama (64%), Peru (58%), Haiti (56%), Uruguay (51%), Guatemala (50 %), Honduras (48%), El Salvador (45%) and Nicaragua (45%).

4. Tax noncompliance Indicators for the 2000-2010 periods

This section presents some VAT and CIT noncompliance indicators for Latin American countries, obtained by the authors, in order to contribute to the analysis of its evolution for period 2000-2010. First a remark should be made on the data.

It is true that the quality of the statistical information in Latin America has improved. For example, most countries in the region have improved the quality of their macroeconomic aggregates statistics. However, there are still many challenges faced by those who want to use tax collection data to estimate indicators such as tax noncompliance. In particular, the statistics published by TAs should be evaluated.

Despite the advances in the field, it is still difficult to have statistics with the level of disaggregation required to obtain certain estimates. For example, many VAT collection statistics are still shown without taking into account the refunds made to exporters. Similarly, in some countries there is no information on the collection of income tax disaggregated between PIT and CIT; or CIT data includes dividends collection, only because companies that pay the dividends are those who pay the corresponding taxes to the Treasury (withholding tax). It has also been verified that when the legislation of several countries provide various CIT rates, no collection is presented for each of them separately. Finally, it is always difficult to identify the collection of income tax paid by individuals with business.

Therefore the homogenization and standardization of tax collection statistics for Latin America is very important, and it is being performed by CIAT jointly with the IDB, ECLAC and OECD, which is summarized in the annual publication of a report detailing the tax revenue of countries, and which first edition appeared in 2011[2].

A similar IDB and CIAT effort has just released income statistics that include not only traditional tax revenues but tax revenue contributions to private health systems and pensions and certain non-tax revenues such as revenues from natural resource (royalties and other extraordinary levies on publicly- owned companies), to better approximate the tax revenues situation in Latin America.

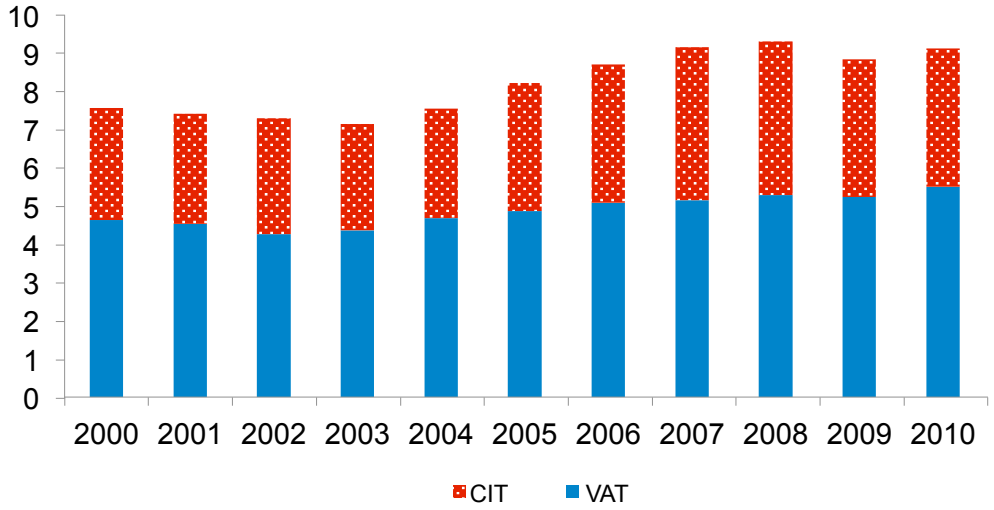
4.1. VAT and CIT inefficiencies

Three quarters of the total tax collection from Latin countries come from taxes on income, profits and capital gains (34%) and from general consumption taxes (43%), mainly VAT.

Between 2000 and 2010, the VAT in Latin America collected 4.9 points of the GDP and 3.3 points for the CIT. This means that both taxes averaged 8.2 points of GDP in this period. For most countries that still have tax income below 16% of GDP they represent half of their income or more.

[2] The publication and the database that accompanies it can be accessed here http://www.latameconomy.org/en/lac-fiscal-initiative/revenue-statistics-in-latin-america/

Graph No. 1
VAT and CIT collection in Latin America
Percentages of GDP



Source: CIAT, IDB, OECD and ECLAC
Prepared by: author

Tax collection statistics show that regarding Income Tax, PIT clearly predominates over CIT. In fact, the average for Latin America in period 2000 - 2010 shows that 69% of the revenue from this tax comes from CIT, while 31% from PIT. Observing this relationship within each country shows that the composition differs but a high CIT prevalence is never observed in the collection.

One could argue that this is a consequence of a greater range of taxes that apply to companies or partnerships. The PIT also tends to have in some cases high minimum exempts which exclude many potential taxpayers.

Unfortunately, tax collection says nothing about the noncompliance levels in VAT and CIT, on their evolution and geographical or sectorial disaggregation. An increase in the collection of these taxes over the economic activity is only observed for the period 2006-2010. In that sense, it is necessary to build complementary indicators to measure the problem, and to be close to a potential collection of taxes.

Based on information from the National Accounts of countries as well as from specific tax information, productivity coefficients have been calculated for the 18 countries in Latin America that are analyzed in this paper. This coefficient results from relating the effective tax burden of the tax as the numerator, divided by the legal tax rate. The effective tax burden relates the actual tax collection to the macroeconomic aggregate most associated with its tax base.

The basic idea is that if tax collection is the result of applying a tax rate to a particular tax base, then the relationship between the revenue (measured as a percentage of a macroeconomic aggregate that best represents the tax base) must be 1 or very close to 1, for every tax rate point. This does not need to be an expected rule because the chosen macroeconomic aggregate may not fully represent the tax base, or represent it only partially.

For example, VAT productivity is usually calculated on basis of either GDP or final consumption. While the tax affects final consumption and without any doubt this is a fundamental component of VAT collection, other components that do not include consumption must be acknowledged, but if they are VAT generators, as consumption or investment for the production of exempt goods.

Using a lower macroeconomic aggregate would increase the effective tax burden and the productivity would be higher, exaggerating the tax collection efficiency.

The productivity calculated for both the VAT and the CIT are shown in Annexes I and II.

In the case of VAT the ratio between the actual collection and private consumption was calculated, divided by the legal tax rate. Meanwhile, in the case of CIT the effective rate was calculated by relating the effective tax collected to the Gross Operating Surplus of National Accounts as a variable that is believed to be more representative of the structural tax base. Also, this result was divided by the nominal tax rate and the productivity ratio was obtained for CIT.

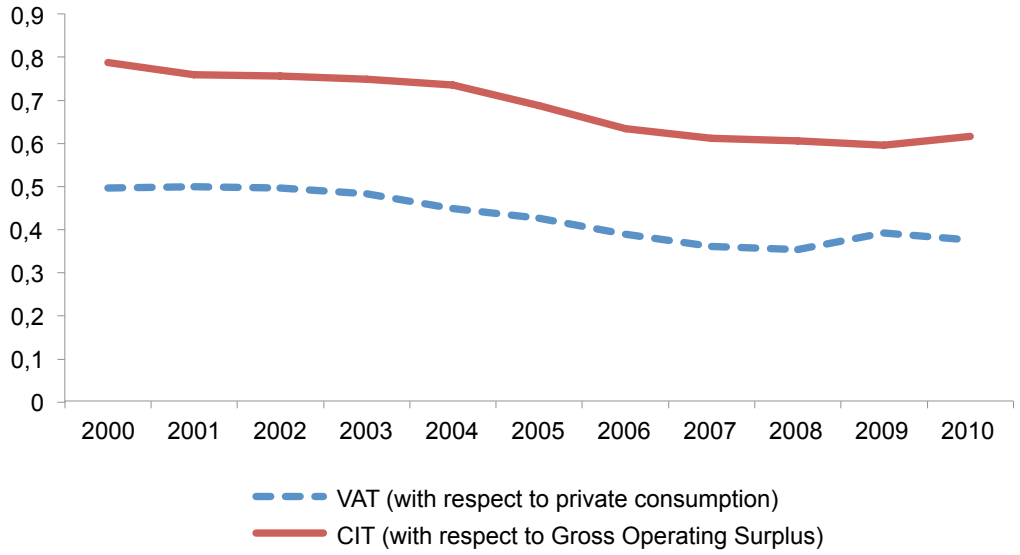
It is noted that in period 2000-2010, the VAT average productivity ratio in Latin America registered an upward trend, especially since the second half of the decade. Thus, the ratio rose from 0.51 in 2000 to 0.63 in 2010. Brazil was not included in the calculations since it has a VAT different from other countries. Analyzing 5-year periods, it has been observed that the improvement is concentrated in recent years. In period 2006-2010 the average ratio was 0.63, or 10 points higher than in period 2000-2005 (0.53). This result could reflect management improvements that different TAs in the region have been implementing.

As in the case of VAT, there is a favorable trend in the CIT productivity average ratio in Latin America for period 2000-2010. Thus, the ratio increased from 0.21 in 2000 to 0.39 in 2010. Neither El Salvador nor Mexico could be considered in the calculations because of missing data. The five-year analysis shows that improvements are also concentrated in recent years. The average coefficient rose from 0.26 in 2000-2005 to 0.39 in 2006-2010.

The low level reached by this indicator has drawn attention, especially when compared with its similar VAT level. Maybe the Operating Surplus is a macroeconomic aggregate too large to approximate the CIT taxable base. The low coefficient results can be attributed to the large number of benefits and tax incentives, apart from the high levels of noncompliance.

Furthermore, it should be noted that over the period of analysis 8 of the 18 countries carried out downward changes in the rate of CIT, like in Paraguay, where at the beginning the tax rate was 30% for the Income Tax for Commercial, Industrial and Service Activities (IRACIS), and in 2010 it was 10%.

Graph No. 2
VAT and CIT Inefficiency in Latin America
1 - Productivity Ratio



Source: CIAT
Prepared by: author

Nevertheless, the favorable evolution of productivity ratios suggests that, despite the incomplete statistical representativeness of the variables chosen as potential taxation bases, CIT's and VAT's inefficiency in Latin America has declined in the period 2000-2010.

However, although they are important indicators and often used, they do not allow knowing the magnitude of the actual tax noncompliance level because the used macroeconomic aggregate evolve according to economic cycles and it does not take into account, as noted previously, the size of tax incentives and tax benefits in the countries. Therefore it is necessary to estimate a potential tax base to able to really obtain an estimate of tax noncompliance.

4.2. New CIT noncompliance estimates using National Accounts.

In previous pages it has been broadly showed the experience of countries with calculating tax noncompliance under the theoretical potential method using National Accounts. To the extent that this method is fairly applied for the case of VAT, this section presents new results for CIT, using a variant of this method.

For the preparation of these estimates it is advisable to previously know every detail about the technique and the scope of the tax in the countries to be evaluated. Annex III provides a brief overview of the tax in each country under analysis.

Even if all the methodological difficulties related to the availability and quality of information can be overcome, it is worth noting that these calculations should be analyzed with caution.

This analysis implicitly recognizes that the test variables are structurally related and, therefore, it tries to measure the degree and the evolution of this relationship, isolating it from all those identifiable elements that affect it, in order to residually obtain a gap that will or may largely be attributable to tax noncompliance.

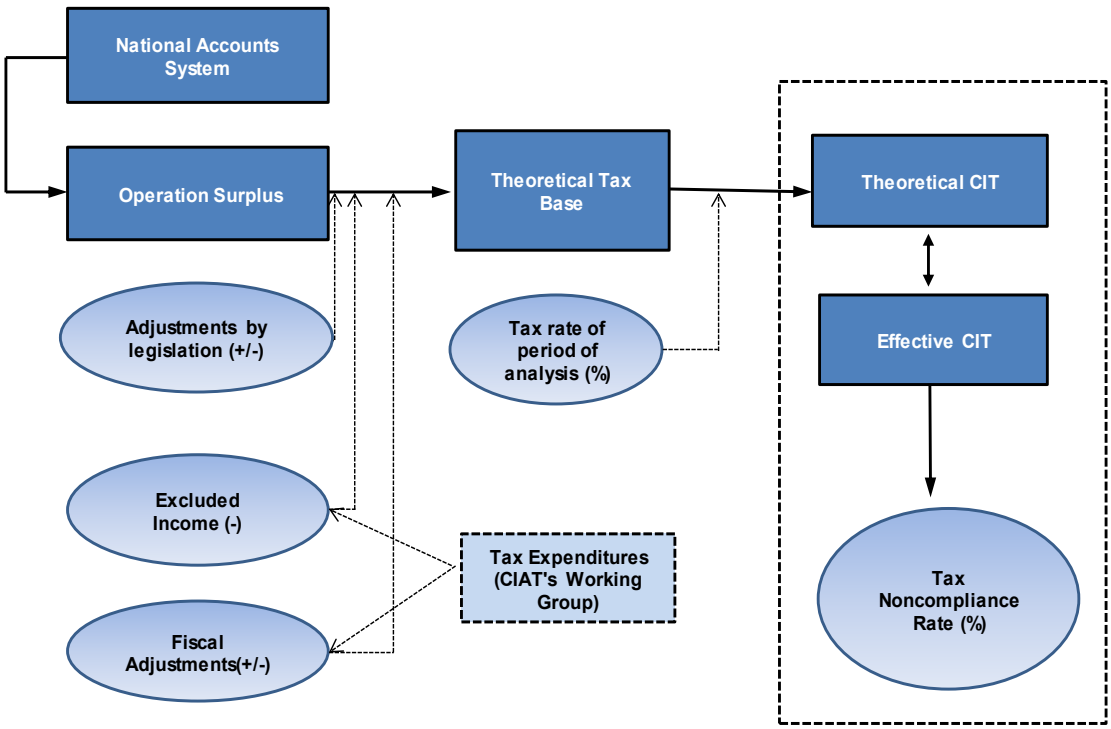
In the case of CIT, the most common procedure is to determine the potential tax base starting from the Operating Surplus. The application of the technique for this tax provides greater difficulties than in the case of VAT, due to the several fiscal adjustments, special regimes and diversity of deductions allowed, forcing a greater number of adjustments to the base of comparison.

In that sense, tax information obtain through CIAT's Network Studies has been used to compose the theoretical potential, which is essential to make potential tax comparable to the tax actually collected. It should be specified that information could not be completed for all countries.

A limitation of the use of the Operating Surplus is that for its construction it is common to use companies' financial statements as well as tax statistics, so macroeconomic aggregates are to some extent already affected by noncompliance and evasion.

Graph No. 3 shows a summary of the general scheme that has been followed by using this method of analysis, and which is derived from the methodologies included in the studies to which the present work has accessed.

Graph No. 3
Method applied for new measurements



Source: The authors
Prepared by: author

National accounting provides the Operating Surplus, which is the economic aggregate presented in the income generation account. This is the accounting balance obtained by

subtracting from the Gross Value Added the amount of wages and taxes on production net of subsidies.

Sometimes details of this account are available by sector of economic activity, enabling to "open" the analysis for different sectors to which the national accounting system provides information.

In these cases it is necessary to classify taxpayers by groups of economic activity available in the National Accounts, so tables of concatenation of sectors are needed, since the taxpayer census usually provides a much wider sectorial detail than that offered in National Accounts. Calculations developed here do not address this issue because they are global; the future task of moving towards to sectorial measurements is still pending.

In general, the Operating Surplus is expressed in gross terms and includes neither the deduction of fixed capital consumption nor the financial components of economic results. When the account is expressed in gross terms, comparability adjustments are needed.

With these adjustments, fixed capital consumption is incorporated to the Operating Surplus as well as the gains or losses of value, trying to make it similar to the accounting results of companies that are the basis of the tax results, which do consider both depreciation and financial results.

Mixed Income incorporates the Operating Surplus assigned to households. Therefore, in the present calculation it is partially considered, estimating the percentage that would be associated with the earnings of individuals who would be covered by the CIT.

In the adjustments for not included income, Operating Surplus is usually reduced by the full amount of income included in simplified taxation regimes, such as the *monotributo*, when a portion of income included in those regimes can be part of the mixed income and not of the operating surplus, which leads to an underestimation of tax noncompliance, adjusting the surplus by a value associated with mixed income.

Adjustments for not included income imply reducing from the operating surplus the amount of income that is exempt or that is not included in the scope of the tax. Both situations have similar tax effect: they are not taxed by CIT. Income of taxpayers included in the simplified tax regimes have been included in the present work.

Here the operating surplus has been adjusted by the income earned by those economic activities which enjoy general exemptions such as education or health (in some cases). On the other hand, the amounts of income derived by those agents that perform economic activities within promoted geographic zones, such as free trade zones for example, have also been incorporated.

In these cases, it was possible to obtain the information because despite being exempted, control agencies usually require submission of information on the activity and its results.

The availability of information on tax expenditures is often a major obstacle that must be overcome to carry out this measurement. Countries that have a periodically measure tax expenditures may use base information from fiscal sacrifice estimates for the adjustments on exempt income, as long as the dimensions defined in tax expenditures studies (period, sectors and others) are adapted to calculations.

For this section estimates, it was possible to access to information collected by the CIAT working group that in 2011 prepared the *Handbook of Good Practice in Measuring Tax Expenditures,* which also contains important methodological issues to estimate its tax cost[3].

The database that accompanied the document contains the quantification of tax expenditures for several countries for which noncompliance calculations were made. For countries not included, through CIAT Studies Network it was possible to get information on the fiscal cost of tax expenditures.

Table No.4
Tax expenditures in Latin America
2010 or latest year available
Percentages of GDP

	VAT	CIT	All other taxes	Total
Argentina	0.9	0.4	0.8	2.1
Bolivia	n.a.	n.a.	n.a.	n.a.
Brazil	n.a.	1.1	1.3	2.4
Chile	0.8	1.0	n.a.	1.8
Colombia	1.5	1.1	n.a.	2.6
Costa Rica	4.2	0.8	1.3	6.3
Ecuador	3.3	1.1	1.7	6.1
El Salvador	n.a.	n.a.	n.a.	n.a.
Guatemala	1.4	1.2	5.3	8.0
Honduras	n.a.	n.a.	n.a.	n.a.
Mexico	1.5	1.9	n.a.	3.4
Nicaragua	6.7	0.6	0.3	7.6
Panama	n.a.	0.2	1.6	1.8
Paraguay	1.6	0.5	n.a.	2.1
Peru	1.5	0.1	0.5	2.1
Dominican Republic	3.2	0.4	2.2	5.8
Uruguay	2.7	1.7	1.2	5.7
Venezuela	n.a.	n.a.	n.a.	n.a.
Average	**2.4**	**0.9**	**1.6**	**4.1**

Source: CIAT, tax authorities
Prepared by: author

Subsequent adjustments were made that regulations of the tax in each country admitted to be incorporated for the determination of the taxable result/income and that they were not included in the operating surplus. As an example, it can be noted the CIT characteristic adjustment, commonly called tax losses from previous years, which allows deducting from current taxable income, the negative amount of previous year losses.

Similarly, the various mechanisms of reduction or abatement of income due for investment promotion were assigned as tax adjustments, as well as those expenses that can be

[3] The document can be found in http://www.ciat.org/biblioteca/opac_css/index.php?lvl=notice_display&id=4856.

deducted incrementally for determining taxable income (depending on legislation: some staff training expenses, expenses on I+D, environmental protection and location, etc.).

Some CIT benefits regimes involve not a reduction of income tax but a reduction of the calculated tax. In these cases this adjustment can be ignored and compare the theoretical CIT, with the effective CIT before these deductions, or deduct from both components the amounts of benefits applied to the calculated tax.

A characteristic of CIT is that a certain rate (generally proportional) is applied on the amount of taxable income, if it is greater than zero. When taxable income is negative, the tax is zero and not negative, this is why several legislations consider prior-year losses adjustment.

This feature affected tax calculations as the Operating Surplus contains the entire surplus of the economy (or from a particular sector) and the portion that generated negative income tax should be considered so to avoid affecting the results.

This adjustment can acquire important materiality and therefore the various treatments that apply lead to different results. The methodological notes on noncompliance studies promoted by ECLAC mentioned that for El Salvador, Guatemala and Mexico these adjustments were not made, while for Argentina, Chile and Ecuador information was taken from tax assessments and the theoretical tax liability was adjusted by the value of tax losses from prior years.

The present study followed a different procedure, once the tax information was available. First, taxpayers who claimed tax losses in the analyzed period were identified. The adjustment was made by deducting from Operating Surplus the amounts of financial results (profits or losses) instead of the fiscal results and the other adjustments for these taxpayers were not included.

For the theoretical tax base determination it was necessary to apply the effective tax rate for the period of analysis. When noncompliance time series for long periods are studied, it is necessary to include in the legislation the prevailing tax rates for each of the fiscal years.

Annex IV shows the evolution of tax rates in period 2000-2010. These variations in the rates led to calculations of an average tax rate for the analyzed period, when in the same year there were changes.

For the determination of tax noncompliance the theoretical tax was compared with the effective tax. In general though CIT is usually of an annual basis, its collection follows a particular logic. Advances are established in the form of periodic payments towards the annual calculated tax, and then, a few months after the end of the evaluated fiscal year, a final annual payment is made to cancel the calculated annual tax balance.

Thus, a certain year CIT collection partly considers income being generated in that same year (due to advance payments) plus tax balances of the previous year, plus a portion corresponding to assessments or prior years reassessments made either by taxpayers or by the TA and assigned to the tax.

When no tax information was available, collection tax statistics were used and from there the effective tax collection for a year was obtained and was taken as comparable for the theoretical tax, which somehow involves comparing variables that do not refer to the same economic period.

Following the procedure described above, CIT noncompliance data for period 2000-2010 was obtained for 12 of the 18 Latin American countries.

It should be noted that the present estimation document fills an information gap for some countries, for which recent works on noncompliance measurements were not found in the first sections. These are Brazil, Nicaragua, Panama, Paraguay, Dominican Republic and Uruguay, which represents a breakthrough in the important task for sizing this phenomenon in the region.

Analyzing the average results, a downward trend in the noncompliance indicator here estimated is observed, since it ranges from 62.4% in 2000-2005 to 50.1% in 2006-2010, confirming the productivity ratio results in the previous section. It is noted that all countries except Dominican Republic experienced a reduction in the CIT noncompliance during the 2006-2010 period.

If the entire period of analysis is considered, a noncompliance average of 56.8% is obtained for Latin America. Countries with the highest CIT noncompliance are Guatemala (72.4%), Costa Rica (69.3%), Panama (68.5%) and Paraguay (64.8%). Meanwhile, the lowest CIT noncompliance levels are recorded in Colombia (34.5%) and Chile (36.4%).

Table No. 5
CIT Tax Noncompliance in Latin America
New results obtained by the authors
Percentages of Potential Tax Collection

	Averages			Max.	Min.
	2000-2005	2006-2010	2000-2010		
Argentina	n.a.	n.a.	n.a.	n.a.	n.a.
Bolivia	n.a.	n.a.	n.a.	n.a.	n.a.
Brazil	53.8	38.0	46.6	63.7	28.9
Chile	45.8	25.1	36.4	60.6	12.5
Colombia	35.4	33.4	34.5	43.9	23.5
Costa Rica	73.3	64.5	69.3	76.8	60.3
Ecuador	69.8	50.0	60.8	83.3	39.2
El Salvador	n.a.	n.a.	n.a.	n.a.	n.a.
Guatemala	73.5	70.2	72	77.1	68.1
Honduras	n.a.	n.a.	n.a.	n.a.	n.a.
Mexico	n.a.	n.a.	n.a.	n.a.	n.a.
Nicaragua	59.1	43.4	52.0	71.0	39.7
Panama	74.1	61.8	68.5	76.9	54.8
Paraguay	79.9	46.6	64.8	85.5	15.9
Peru	55.6	50.2	53.1	66.7	36.9
Dominican Republic	54.9	70.3	61.9	75.0	30.7
Uruguay	73.2	48.2	61.8	83.8	34.6
Venezuela	n.a.	n.a.	n.a.	n.a.	n.a.
Average	**62.4**	**50.1**	**56.8**	**85.5**	**12.5**

Source: The authors
Prepared by: author

Regarding noncompliance estimates, it is important to compare them with the existing CIT measurements collected in this study. Thus, for period 2000-2010, CIT tax noncompliance calculated by the authors is 7.2 percentage points higher than that estimated by the various works mentioned in the earlier sections of this document. However, the downward trend of recent years is maintained.

Additionally, by relying on the effective tax collection, information on tax noncompliance calculated here and the calculations of the fiscal cost of tax expenditures, it is possible to build the so-called structural CIT collection, which is defined as the sum of the three mentioned concepts. Its measurement allows each country to acknowledge the impact of each of its components and its importance as a factor explaining tax collection, while making the comparison with other countries.

High levels of tax expenditures lead us to think that the greatest responsibility in tax inefficiency lays on those responsible for designing tax policy, while a high incidence of tax noncompliance indicates that TA is the one that must take measures to improve tax efficiency. These components take a different dimension and have different influence in each country, so conclusions also differ from country to country.

Table No.6 presents the consolidated structural collection for period 2000-2010 for 12 of the 18 countries in Latin America that had all the information necessary to perform the calculation.

It can be seen that in period 2000-2010, on average, tax noncompliance as part of CIT structural collection reached 50.6%, while the effective tax collection only represented 39.8%. Meanwhile, tax expenditures represented 9.6% of structural tax collection.

This means that noncompliance constitutes one of the main structural components of CIT collection in Latin America. Results show a high variability, from a reduced noncompliance participation in the structural collection of 27.9% in Chile and 29.8% in Colombia, to a high participation in Dominican Republic (65.5%), Guatemala (64.6%), Panama (63.6%) and Paraguay (63.0%).

In general, it should be noted that the completion of this exercise of estimating the CIT noncompliance, despite acknowledging its limitations, seeks essentially to serve as an example to officials of those TAs' that first started in these tasks. Tax studies areas become relevant mainly for their access to key tax information that is fundamental for this type of analysis and estimates.

It seeks mainly to raise interest and attention to the need for a quantitative benchmark of tax noncompliance levels in different countries, the same that can contribute to the TA's decision making about where to focus its actions and resources to reduce it.

These exercises measurement also seek to convey the need to follow the evolution of tax noncompliance over time, considering this as an indirect indicator of the TA management.

Progress towards modern methods that exploit microeconomic information is necessary to confirm the global results. The still moderate knowledge of these techniques opens a new collaborative space in which CIAT can provide a platform for cooperation and exchange of experiences.

Table No. 6
CIT Structural Collection in Latin America
Average 2000-2010
Percentages

	Efective Tax Collection	Tax Expenditure	Tax Noncompliance	Structural Tax Collection
Argentina	n.a.	n.a.	n.a.	n.a.
Bolivia	n.a.	n.a.	n.a.	n.a.
Brazil	48.1	14.4	37.5	100.0
Chile	58.9	13.2	27.9	100.0
Colombia	56.9	13.3	29.8	100.0
Costa Rica	29.5	9.9	60.7	100.0
Ecuador	38.4	10.9	50.6	100.0
El Salvador	n.a.	n.a.	n.a.	n.a.
Guatemala	25.1	10.3	64.6	100.0
Honduras	n.a.	n.a.	n.a.	n.a.
Mexico	n.a.	n.a.	n.a.	n.a.
Nicaragua	47.8	8.3	43.9	100.0
Panama	32.5	3.9	63.6	100.0
Paraguay	31.8	5.2	63.0	100.0
Peru	47.1	1.3	51.6	100.0
Dominican Republic	29.6	4.8	65.5	100.0
Uruguay	32.5	19.3	48.2	100.0
Venezuela	n.a.	n.a.	n.a.	n.a.
Average	**39.8**	**9.6**	**50.6**	

Source: The authors
Prepared by: author

4.3. Using TAs management data

In addition to the theoretical potential method using National Accounts, the authors had access to tax management data (a statistical appendix) compiled in the study *"State of Tax Administration in Latin America: 2006-2010",* a joint effort of the IDB, CIAT and IMF (CAPTAC-DR) [4]. This section is based on this work.

From these data it is possible to build indicators to get closer to the well-known tax gaps: registration gap, returns gap, payment gap and veracity gap, which are often discussed but mostly on a qualitative level, because researchers do not always manage to access consistent data of tax management.

Registration of taxpayers is one of the basic pillars of TAs functioning as it allows to know which individual or legal entity is engaged in transactions with tax implications. Registration

[4] The study can be accessed in http://www.ciat.org/index.php/es/productos-y-servicios/ciatdata/administraciontributaria.html.

requires constant work to bring new taxpayers and fight against the underground economy, eliminate those that no longer have obligations and to update the identification or the obligations of each registered taxpayer.

If the TA registered taxpayers are used and they are compared with some proxy of the potential universe of taxpayers that the economy should show, an estimate of the registration gap can be obtained. Population data, the EAP or the employed EAP can be used. The present study used the employed EAP to better approach this potential universe.

The data show that on average, for the period 2006-2010, Latin American countries show a registration gap of 64.4%, noticing a significant improvement in recent years. The highest gaps are in Honduras, Dominican Republic, Bolivia, Nicaragua and Guatemala.

Many of these results are explained due to the limited registration policies that TAs still follow, appealing to criteria of simplicity. For example, many release a certain group of taxpayers from the obligation to register and still not all have universalized the Tax Identification Number (NIF) in the economy, and this is essential to identify taxpayers' financial, commercial, estate etc. operations, which may have tax implications.

To increase the level of voluntary compliance, TAs must implement rigorous monitoring of compliance with tax obligations by taxpayers and at the same time, try to achieve a relationship of trust with compliant taxpayers and reduce the indirect tax burden. The control of those not submitting tax returns is one of these controls.

The assessment gap can be built by comparing the number of those non-submitters in VAT returns and CIT returns with the number of registered taxpayers, but that retain some activity with the TA. These taxpayers are usually called active taxpayers.

What can be seen is that on average, for the period 2006-2010, the assessment gap in Latin American countries in the case of VAT is 34.7% and 25.8% for CIT. Note that in some calculations the registered taxpayers' data had to be used, due to not having data for active taxpayers. According to the data, Argentina, Mexico and the Dominican Republic are the countries with the highest gaps in both taxes. It also highlights the high VAT gap registered in Peru.

The results may be due to the poor quality of the information included in the taxpayers' registry or because of a high level of noncompliance with tax obligations. Whichever the case, TAs have to react to improve performance and significantly reduce noncompliance, for example, as SII of Chile has achieved.

The improvement of registry's quality, orderly and systematic campaigns of control requirements and the rigorous application of the sanctioning regime are essential to prevent discrediting the TA and prevent taxpayers from feeling that noncompliance go unpunished because the TA is unable to react and to require the proper assessment of tax returns by taxpayers.

It is also necessary to provide good information services as well to assist taxpayers. Information services are a counterpart to new management models that transfers many obligations to taxpayers and on the same time those services are a right for all citizens to be informed about the correct application of legal norms.

The coercive or executive collection is the closing phase of the whole tax management process that starts with the beginning of the tax liability and ends with debt collection in the voluntary period, or otherwise, in the coercive collection.

TAs should have coercive means to forcefully collect unpaid debts by taking protective measures, seize assets of the debtor, order the retention of third party payments, etc., and all these in spite of the subsequent review proceedings in courts.

From the data of the work by IDB, CIAR and CAPTAC-DR the amount of the new debt presented to the collection offices each year (fresh debt) can be obtained, as well as the amount of debt that was extinguished by payment or other causes (failed, canceled by court order etc..) during the same period. With this information VAT and CIT estimates can be calculated for current periods that were not paid within the due dates.

The payment gap is calculated as the ratio of the tax not paid on time and the tax determined voluntarily as reported by taxpayers. As there was no access to the amounts reported, it is estimated that the determined tax is approximated by adding to the effective VAT and CIT collection of a year the amount of debts for VAT and CIT that entered the collection areas in the same period, which in turn is the unpaid tax of that year.

In both cases, the underlying assumption is that both the effective tax collection and the debt charged each year correspond to similar tax periods.

Thus, the average payment gap for period 2006-2010 in Latin American countries is 8.1%, a relatively low percentage that would show a good level of payment compliance with the obligation reported by taxpayers. The highest gaps are recorded in Bolivia, Mexico and Uruguay.

Finally, the TA must send a clear message to society by showing that it is capable of detecting noncompliance and able to correct it fast. The social perception of risk control is essential to obtain a good voluntary compliance level and, in order to achieve it the TA must properly combine different types of control actions.

Thus, it is necessary to conduct a great number of massive and quick controls, which essentially use the available information to transmit tax presence in time, the TA has to develop in-depth, comprehensive and rigorous audits to try to avoid the most complex forms of fraud and tax evasion.

Taking into account the IDB, CIAT and CAPTAC-DR data on the number of taxpayers audited for VAT and CIT and the effectiveness of examination efforts (i.e., total debt recovered or liquidated and the effective amount of tax collected), the veracity gap can be estimated, defined as the ratio between the unreported tax and the tax that should be reported.

Through the total amount of the determined or liquidated debt for VAT and CIT by the different examination actions and the number of taxpayers evaluated, an estimate of the average amount of observed tax for each taxpayer is obtained. By scaling this amount by the number of taxpayers affected to both taxes (without duplication), an approximation of unreported tax or numerator of the ratio can be obtained. Meanwhile, the tax that would have been effectively reported can be approximated by adding to the reported tax which was approached by calculating the payment gap, the unreported tax estimated here.

Following this procedure, a joint veracity gap for VAT and CIT in Latin American countries was calculated at approximately 30.8% for period 2006-2010, with Costa Rica, Mexico, Dominican Republic and Peru as the countries with the greatest gaps. It should be noted that few TAs provided the information needed to build gap estimates, which reduces representativeness to the obtained average value. However, in order to get some referential values, a necessary approximation is presented.

Table No.7
Tax Noncompliance Gaps
(%)

	Registration Gap (according to Employed EAP)	Assessment Gap		Payment Gap (VAT and CIT)	Veracity Gap (VAT and CIT)
		VAT	CIT		
Argentina	39.7	48.2	30.4	3.8	19.9
Bolivia	94.3	n.a.	n.a.	20.6	n.a.
Brazil	n.a.	n.a.	23.6	n.a.	n.a.
Chile	36.0	13.9	0.6	3.7	6.7
Colombia	68.9	n.a.	n.a.	n.a.	n.a.
Costa Rica	n.a.	29.7	8.7	0.4	69.1
Ecuador	63.2	33.0	60.4	11.4	29.3
El Salvador	n.a.	28.0	n.a.	2.3	36.9
Guatemala	90.0	15.3	n.a.	0.2	n.a.
Honduras	97.2	4.7	13.4	0.2	2.1
Mexico	24.5	37.9	43.2	20.7	52.6
Nicaragua	91.8	n.a.	14.2	10.9	1.8
Panama	20.1	n.a.	n.a.	n.a.	n.a.
Paraguay	82.4	43.6	n.a.	3.0	n.a.
Peru	56.0	84.2	n.a.	10.5	47.7
Dominican Republic	95.3	42.4	35.4	2.9	41.5
Uruguay	42.8	34.9	28	23.4	n.a.
Venezuela	n.a.	n.a.	n.a.	n.a.	n.a.
Simple Average	**64.4**	**34.7**	**25.8**	**8.1**	**30.8**

Source: CIAT, IDB, CAPTAC-DR
Prepared by: author

Leaving aside the registration gaps (for not having a reliable comparable universe due to heterogeneous registration policies of TAs) and the payment gap (for being biased towards those who do report), the tax noncompliance average for the Latin American countries obtained from the authors' calculations is 30.4% for both taxes.

Conclusions and Recommendations

The present study has allowed confirming the recent interest of Latin American countries to measure tax noncompliance. While only a few years ago those were only works from public entities, universities, international organizations or private institutions; nowadays TA's interest for these tasks is increasing.

In 9 out of 18 countries analyzed, TAs have experience in measuring tax noncompliance for at least one tax.

Regarding the methods used for this purpose, the present paper has reviewed the characteristics of the most important ones, in order to show their advantages and disadvantages. While most of the methods still remain exclusively at the academic level, other

methods have actually been used. A common issue has been identified in recent tax noncompliance measurement works focused on Latin American countries, which is their preference to use the theoretical potential method using National Accounts, despite all the adjustments that must take place, which can result in a very intense use of tax information; this is quite present in the TAs measurement, for example. Most measurements calculate VAT noncompliance and lesser in CIT.

According to indicators shown in the present work, the fact is that there are indications of a reduction in tax noncompliance for VAT and CIT in Latin American countries for period 2000-2010. Firstly productivity ratios calculated show a reduction of 21.3% and 17.6% in the inefficiency of VAT and CIT collection, respectively, between the first and second five-year period.

Similarly, in the case of CIT, the calculations obtained from other works and those performed by the authors, under the theoretical potential method using National Accounts, show a tax noncompliance reduction from the first to the second five-year period, of 11.6% on average for the first one and 19.7% on average for the second. Sectorial estimates are anyway needed in order to be more conclusive; however, the downward trend is confirmed.

The best results for period 2006-2010 are further confirmed with the estimates obtained in the last section of the present study that uses data from TAs management from IDB, CIAT, CAPTAC-DR work with which tax gaps are estimated. If all the discussed noncompliance results are averaged for both taxes, except for the registry gap and the payment gap, the average noncompliance level obtained for Latin American countries is of 30.4%, a level that is below the average of 37.8% obtained from other estimates.

In measuring tax noncompliance there is no single or perfect method, being necessary to evaluate the application of each method in its own context. It is important to properly analyze the results obtained and, rather than only pay attention to the point result, it is advisable to observe time trends for which is desirable to have annual time series.

A contribution of the present work has been precisely to show historical time series instead of point measurements, putting together all recent tax noncompliance measurements that could be found for the whole 2000-2010 period, and then proposing 3 measurements, also on a time series fashion.

In times of fiscal transparency, it is still difficult to access to tax information. TAs do not make available to researchers aggregate data from tax returns that are fundamental to measurements. Here the authors have taken advantage of the information provided by the CIAT Network Studies. Without their valuable collaboration it would not have been possible to make the necessary adjustments for completing the estimates.

Similarly, differences in the tax noncompliance measurement development levels in Latin American TAs are verified, so it is considered very important to develop training, standardization of methodologies, provision of relevant tax information, follow up of results, etc... For this, a course of action within the collaboration framework that CIAT promotes is suggested, so that together with other international organizations, the consolidation of working groups on this topic could be achieved.

Finally, although tax noncompliance measurement helps to dimension the phenomenon, the real challenge is to work in a coordinated manner in the countries to continue fighting this scourge with improved tax policies and better tax administration, to effectively expand the tax base and ensure efficient tax collection.

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Annex I
VAT Productivity in Latin America
For each point of the standard effective tax rate

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average			Max.	Min.
												2000-2005	2006-2010	2000-2010		
Argentina	0.459	0.395	0.379	0.422	0.525	0.538	0.581	0.627	0.638	0.624	0.670	0.453	0.628	0.532	0.670	0.379
Bolivia	0.494	0.532	0.567	0.581	0.624	0.680	0.727	0.769	0.826	0.732	0.791	0.580	0.769	0.666	0.826	0.494
Brazil	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Chile	0.709	0.703	0.727	0.718	0.732	0.736	0.717	0.762	0.788	0.690	0.743	0.721	0.740	0.729	0.788	0.690
Colombia	0.390	0.395	0.388	0.436	0.454	0.487	0.542	0.525	0.555	0.503	0.522	0.425	0.529	0.472	0.555	0.388
Costa Rica	0.521	0.555	0.557	0.547	0.569	0.581	0.632	0.675	0.677	0.571	0.575	0.555	0.626	0.587	0.677	0.521
Ecuador	0.743	0.792	0.817	0.739	0.726	0.746	0.770	0.802	0.795	0.794	0.798	0.761	0.792	0.775	0.817	0.726
El Salvador	0.476	0.508	0.511	0.524	0.507	0.535	0.578	0.549	0.533	0.510	0.557	0.510	0.545	0.526	0.578	0.476
Guatemala	0.498	0.518	0.531	0.526	0.536	0.492	0.516	0.561	0.510	0.473	0.497	0.517	0.511	0.514	0.561	0.473
Honduras	0.568	0.519	0.520	0.568	0.579	0.576	0.603	0.652	0.654	0.556	0.578	0.555	0.608	0.579	0.654	0.519
Mexico	0.343	0.343	0.337	0.336	0.335	0.346	0.378	0.373	0.387	0.346	0.367	0.340	0.370	0.354	0.387	0.335
Nicaragua	0.495	0.467	0.469	0.496	0.527	0.566	0.614	0.620	0.568	0.561	0.588	0.503	0.590	0.543	0.620	0.467
Panama	0.493	0.445	0.419	0.502	0.521	0.537	0.627	0.751	0.876	1.013	0.831	0.486	0.820	0.638	1.013	0.419
Paraguay	0.587	0.582	0.590	0.645	0.678	0.725	0.750	0.753	0.773	0.802	0.892	0.634	0.794	0.707	0.892	0.582
Peru	0.405	0.373	0.394	0.415	0.427	0.460	0.506	0.514	0.563	0.502	0.569	0.412	0.531	0.466	0.569	0.373
Dominican Republic	0.422	0.381	0.394	0.331	0.332	0.308	0.343	0.371	0.336	0.305	0.307	0.361	0.332	0.348	0.422	0.305
Uruguay	0.432	0.453	0.446	0.476	0.491	0.510	0.543	0.559	0.546	0.544	0.536	0.468	0.546	0.503	0.559	0.432
Venezuela	0.551	0.568	0.528	0.548	0.814	0.941	0.981	1.026	0.981	0.826	0.820	0.658	0.927	0.780	1.026	0.528
Simple Average	**0.505**	**0.502**	**0.504**	**0.518**	**0.552**	**0.574**	**0.612**	**0.641**	**0.647**	**0.609**	**0.626**	**0.526**	**0.627**	**0.572**	**0.683**	**0.477**

Source: CIAT
Prepared by: author

Annex II
CIT Productivity in Latin America
For each point of the general effective tax rate

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average			Max.	Min.
												2000-2005	2006-2010	2000-2010		
Argentina	0.194	0.202	0.120	0.191	0.264	0.284	0.288	0.292	0.264	0.240	0.277	0.209	0.272	0.238	0.292	0.120
Bolivia	0.153	0.145	0.139	0.136	0.159	0.217	0.244	0.244	0.276	0.455	0.340	0.158	0.312	0.228	0.455	0.136
Brazil	0.217	0.234	0.329	0.303	0.299	0.357	0.356	0.393	0.442	0.383	0.378	0.290	0.390	0.336	0.442	0.217
Chile	0.375	0.520	0.541	0.512	0.482	0.665	0.739	0.845	0.801	0.482	0.701	0.516	0.713	0.606	0.845	0.375
Colombia	0.314	0.412	0.395	0.348	0.387	0.382	0.394	0.453	0.431	0.483	0.404	0.373	0.433	0.400	0.483	0.314
Costa Rica	0.270	0.285	0.328	0.349	0.292	0.339	0.377	0.396	0.463	0.426	0.409	0.311	0.414	0.358	0.463	0.270
Ecuador	0.158	0.307	0.280	0.279	0.306	0.375	0.400	0.396	0.500	0.567	0.496	0.284	0.472	0.370	0.567	0.158
El Salvador	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Guatemala	0.212	0.184	0.227	0.219	0.212	0.221	0.252	0.247	0.244	0.230	0.223	0.213	0.239	0.225	0.252	0.184
Honduras	0.288	0.332	0.317	0.391	0.435	0.455	0.544	0.623	0.585	0.525	0.523	0.370	0.560	0.456	0.623	0.288
Mexico	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Nicaragua	0.216	0.222	0.276	0.382	0.359	0.385	0.414	0.421	0.433	0.472	0.462	0.307	0.440	0.367	0.472	0.216
Panama	0.156	0.120	0.116	0.119	0.137	0.145	0.195	0.197	0.190	0.254	0.241	0.132	0.215	0.170	0.254	0.116
Paraguay	0.239	0.203	0.198	0.149	0.185	0.278	0.540	0.533	0.510	0.845	0.659	0.209	0.617	0.395	0.845	0.149
Peru	0.116	0.138	0.155	0.216	0.195	0.269	0.392	0.452	0.407	0.304	0.353	0.181	0.381	0.272	0.452	0.116
Dominican Republic	0.148	0.197	0.175	0.151	0.116	0.139	0.119	0.178	0.161	0.144	0.121	0.154	0.145	0.150	0.197	0.116
Uruguay	0.206	0.186	0.141	0.115	0.223	0.264	0.321	0.253	0.396	0.418	0.414	0.189	0.361	0.267	0.418	0.115
Venezuela	0.139	0.178	0.178	0.167	0.193	0.227	0.287	0.304	0.202	0.245	0.156	0.180	0.239	0.207	0.304	0.139
Simple Average	**0.213**	**0.242**	**0.245**	**0.252**	**0.265**	**0.313**	**0.366**	**0.389**	**0.394**	**0.405**	**0.385**	**0.255**	**0.388**	**0.315**	**0.460**	**0.189**

Source: CIAT
Prepared by: author

Annex III

Brief description of the CIT in Latin America: 2000-2010[5]

Argentina

Resident companies in Argentina should consider their income for tax purposes on a worldwide basis. The tax rate is 35% which remained fixed throughout the analyzed period. The most relevant tax exemptions are those on profits of civil associations, mutual foundations and cooperatives; interest on government securities and refunds as a result of benefits on certain economic activities. The determination of the economic impact of exemptions was based on tax expenditure reports elaborated in the country.

To determine the taxable base, financial statements are the starting point, based on generally accepted accounting principles and above them adjustments are made based on the current tax laws. In principle all necessary expenses for obtaining income are allowed, with some exceptions, among which are the expenses of directors or representatives as well as certain royalties to non-residents for use of intellectual property.

Regarding fixed assets, a form of straight-line amortization is fixed establishing in the legislation only the depreciation rate for buildings in 2%, which can be increased if properly justified and depending on certain characteristics of the construction. It is also authorized to lower to cost the depreciations of intangibles as long as they have a limited life, which must be demonstrated by the taxpayer. Regarding losses from prior years, a deduction for up to five years is expected, applicable onwards.

The fiscal year for tax purposes coincides with that for financial statements. A deadline is established for submitting the tax return and final regularization tax payment, anticipating a series of prepayments during the fiscal year based on last year's determined tax (a tax payment equivalent to 25% of prior-year tax payment and 9 equal payments of 8.33% of that tax).

Bolivia

Bolivia taxes Bolivian-source income with the IUE, reaching national companies as well as Bolivian-source income earned by permanent establishments of non-resident entities in the country, at a rate of 25%. This rate remained fixed throughout the period of analysis. Since 2007, mining operators must pay an additional 12.5% of the same tax, as long as certain thresholds of price previously established by law are exceeded.

Overall, computable income is income that arises from the financial statements of companies, to which some adjustments are made according to the legal provisions. In general all expenses incurred during the fiscal year to obtain and maintain income, with some exceptions, are deductible. Some unsupported deductions are those personal expenses or withdrawals made by the company's owners or partners. Interests charged by related companies are deductible but with a certain limit. There are also limitations to the deduction of donations made to non-profit entities.

Provisions for contingent losses are not deductible, admitting only deduction for severance payments that have actually been paid. Regarding depreciation, the standard linear depreciation method is established in the law as well as the annual tax rates that can be applied, ranging from 2.5% for

[5] El Salvador.is not included

buildings up to 25% for electronic data equipment. The CIT tax law allows a deduction for prior-year losses without time limitation.

Fiscal years end on December 31 for most activities, establishing special closures for industrial, agricultural and mining activities in March, June and September. There is a maximum period of 120 days for the submission of tax returns and tax payments, without provision for anticipated payments along the year, except for mining exports, for which are calculated as a percentage of their income.

Brazil

Brazilian resident companies are taxed at the tax under the principle of worldwide income. Branches and agencies of foreign owned Brazilian companies also have their income affected by the tax. The basic tax rate is 15%, which a surcharge of 10% when revenues exceed a certain threshold defined legally should be added. In addition, Social Contribution Tax with a general rate of 9% is established. There are various benefits and tax incentives for certain economic enterprises in less developed areas.

Overall net income is determined from the financial statements with fiscal adjustments provided in the legislation. All expenses incurred to obtain income are admitted for deduction, if they are appropriately documented and constitute actual disbursement in the corresponding fiscal year. Some expenses related to fixed assets such as contracts for financial or operational leasing, global bonds to officials without identifying beneficiaries as well as certain grants or donations, are not allowed for deduction.

Fixed assets should be depreciated linearly according to a set of rates established in the legislation, ranging from 4% for buildings or real estate up to 20% for computer equipment or vehicles. Accelerated depreciation is allowed in the case of industrial companies operating in full shift. Tax losses can be applied forward indefinitely but only up to 30% of net income before tax for the corresponding year.

Overall fiscal year coincides with the calendar year, the tax return and the final payment of the tax must be submitted within 120 days after the end of the fiscal year, and anticipated payments are considered throughout the year.

Chile

Chilean corporate income tax levies on the net income earned during the year, of global source for locally incorporated companies and territorial source for branches of foreign entities. The tax rate is 17%, which is in force since 2004. In 2000-2001 the rate was 15%, while in 2002 it was 16% and in 2003 of 16.5%. As a particular aspect of taxation of companies it should be noted that this tax operates as a credit against the personal income tax of owners or partners of taxable entities.

Computable income is the net result arising from the financial statements; following the internationally accepted accounting principles. All earnings are included, as well as all expenses are deductible for obtaining income and preserve its source. Regarding the accounting treatment of inventory, FIFO method and WAC (Weighted Average Cost) methods are admitted. The tax law provides the adjustment of certain assets and liabilities during the year due to its exposure to the effects of inflation, which implies the recognition of a net result which can be positive or negative depending on the asset or liability position for such adjustment.

Depreciation is calculated using the straight-line method, for which the tax law states that various fixed assets may be amortized in several yearly periods, from 6 years for electronic data processing equipment, up to 80 years for buildings. Accelerated depreciation is allowed, applying a lifetime of one-third of the legally provided, according to the asset in question. For purposes of determining the

personal income tax, this special adjustment is not considered. The Chilean system provides unlimited deduction of tax losses from prior years, which must be compensated first with undistributed results then to be attributed to the exercise by lowering the income.

The standard fiscal year must end by December 31 of each year, setting a deadline for assessment and payment of the regularization balance of up to April 30 of the following year. Monthly payments of the tax must be made and are calculated based on last year´s calculated tax.

Colombia

The corporate tax taxes domestic companies under the criteria of world or global income. The current tax rate is 33%, reduced from the previous value of 35%. The reduced tax rate applicable to industrial users located in the Free Trade Zone can be highlighted; with a rate of 15%. Even though dividends are not taxed, gains distributions not subject to CIT must pay a tax of 33%, which is withheld at the source.

For the determination of CIT taxable base, non-taxable income, refunds, among other concepts, are deducted from gross income. Generally all expenses related to the activity which generates income and should be reasonable and proportional to the taxpayer's productive activity volume, with some exceptions can be deducted from income.

All expenses incurred with non-residents entities can be deductible if complying with the general rule. If the counterpart is not taxed, no more than 15% of net income can be deductible, before considering those expenses.

Among the most relevant exemptions to the tax, are those for income generated by the activities of hospitality, software and river transportation can be mentioned. More recently the exemption of power generation through wind sources, biomass and agricultural residues were included.

Under Colombian tax law, the taxable base will be the greater one between the actual tax base and the minimum presumed profit, which is equal to 3% of net assets as of December 31 of the prior fiscal year. Certain assets may be excluded from this calculation, and certain taxpayers are not required to calculate the presumptive income. The amount of income tax after the tax credits may not be less than 75% of income as determined on the presumptive income rules, regardless of the tax credits.

During the analyzed period, the purchasers of fixed assets related to economic activities of the company could take advantage of deducting from the taxable base up to 40% of their value, then applying the normal depreciation regime to the whole acquisition value. Users of the Free Trade Zones, taxed at 15% could not receive this benefit.

While the income tax is of annual determination, collection is implemented through a system of advanced payments during the fiscal year, for which a schedule for large taxpayers different from the rest of taxpayers is established.

Costa Rica

Costa Rican companies are taxed for the Income Tax based on the territoriality or source principle, defining a system of proportional rates of 10%, 20% and 30% for certain income thresholds.

Among the most relevant exemptions are those of companies operating under the Free Zones regime, that receive a 100% tax exemption on the first 8 years, which is then reduced to 50% in the last 4 years. When a portion of income is from foreign sources, the legislation establishes fixed percentages

of Costa Rican source income for certain economic activities, such as international transport, insurance companies and international news agencies, among others.

Overall, for the purposes of calculating the tax, the income determination is made based on the financial statements, which are expressed in accordance with international financial reporting standards, considering a series of fiscal adjustments which reduce or increase its base. Certain provisions for outstanding debts or inventory obsolescence are not freely admitted expenses, but only to the extent that they have implied actual expenditures during the fiscal year.

Fixed assets are depreciated according to the straight-line criterion defining thresholds of useful lives for a classification of fixed assets, from 15 to 50 years for buildings, up to 3 to 10 years for vehicles. Regarding losses from previous years, they can be carried forward for three fiscal years, with five for the agricultural sector; in turn industrial enterprises can drag forward the negative results of their first five fiscal years.

Fiscal years end September 30 of each year, with some exceptions. Companies have a period of 2 ½ months to file the tax return and pay the due balance. A prepayment system is established calculated on the basis of the highest between last year's tax and the average of the last three years. These should be paid quarterly.

Dominican Republic

Companies are subject to tax on their income from Dominican sources. This tax will also apply to non-residents who earn income in the country. The general tax rate is 25%, which remained unchanged throughout the period of analysis, except in 2006.

The tax system in this country considers certain exemptions to the general regimen; the main ones are the Free Trade Zones or Free Zones.

The tax is calculated based on taxable income of the fiscal year, which is determined by applying a series of fiscal adjustments required by the regulations, to the financial statements. In general deductions are allowed for expenses incurred to generate income and to preserve its source, as long as they are properly documented. There are exemptions to the deductibility such as interest earned on purchases of capital accumulation, debts for tax defaults and certain intangible depreciation.

There are some particular forms of tax determination and of the portion of income from Dominican sources, for example the non-resident insurance companies operating in the country must recognize a minimum percentage of their income as from Dominican sources. There are also special rules for recognition of income from Dominican sources for transportation companies to and out of the country.

For adjustments in assets affecting income, in the Dominican Republic several inventory maintenance systems are admitted, the most common being the LIFO. The legislation admits a fixed deduction percentage each year on the portfolio of unrecoverable outstanding debtors, independently from verifying the non-recoverability. Depreciations are calculated using the declining balance method, tax legislation establishing specific tax rates from 5% depreciation for buildings up to 25% for certain vehicles.

Tax loss carry forwards from previous years up to 5 years are allowed, but with annual deduction tops.

Ecuador

The corporate tax rate is applicable to domestic companies on their worldwide income and to foreign companies operating from Ecuador, for the Ecuadorian source income. During the period of analysis, the tax rate was 25%.

For the determination of taxable income, expenses incurred during fiscal year required to obtain the income are admitted as deductible. Are also admitted as deduction distributions made to employees, for up to 15% of income. Also the expenses incurred abroad, in some cases with specific limits established in the regulations are admitted.

The standard tax depreciation of fixed assets considers a linear depreciation using fixed percentages depending on the type of goods. The amortization periods range from 20 years for buildings and certain transportation means up to 3 years for electronic data processing equipment. It also considers a 10-year amortization regime for organization expenses. The tax legislation provides for the adjustment of prior year losses, up to 5 years and up to 25% of the net income that is being calculated.

Among the most notable exemptions that generate tax expenditure on corporate tax of Ecuador are the dividends and profits distributed by domestic companies, in favor of other domestic companies as well as individuals, domestic or foreign, resident or not in Ecuador.

Fiscal closures are scheduled for December 31 of each year. A system of two annual payments on advance of the annual tax, in June and September is provided. The advance shall be equal to the highest among the 50% of tax on income, less certain deductions of the preceding year, and the sum of fixed percentages of share capital, total costs, assets and income for the year underway. A system of withholding tax on certain assumptions is also considered.

Guatemala

The corporate tax is based on the territoriality principle, affecting revenues achieved by companies in Guatemala territory. There are two tax systems for corporate income. One is the general scheme, which is applied to the gross income, and the other is an optional regime where taxable base is the net result of the business.

Through the general system the tax is determined by applying a tax rate of 5% of gross revenues. For the calculation exempt incomes as well as offshore sources are excluded. Those who choose the optional regime can deduct the necessary expenses to obtain the rent and maintain its source. The applicable rate under this system is 31%. Companies operating in free zones enjoy a general tax exemption for a period of 5 or 10 years.

Another feature of the optional regime is the deductibility of fixed percentages provisions. Thus bad debts can be deduced by up to 3% of the amount of annual income. It is also admitted the tax liability reduction for provisions for lay-outs up to a fixed percentage of salary costs. Straight-line depreciation is admitted, which is set to maximum rates of annual depreciation by type of fixed assets, from 33.3% for equipment up to 5% for real estate.

Fiscal years are annuals, coinciding with the calendar year. Those taxed under the general regime must declare monthly their gross income and anticipate 5% minus the withholdings made. Those who choose the optional regime should make quarterly payments in advance of the annual tax.

Honduras

The CIT taxes the world income of Honduran companies with a rate of 25% on its net taxable income. Since 2004, the tax rate is 25%.

Incomes generated by certain economic activities in certain areas are exempt, such as free trade zones, the industrial processing zone, agro-industrial export zone or the free tourism zone. There are not tax expenditure reports, so no adjustment is made in the theoretical tax due to these exemptions as well as for other tax exemptions.

The taxable amount of income tax is determined based on the financial results, which are made eligible for certain tax adjustments of income determination according to Honduran law. Criteria FIFO, LIFO and WAC are admitted for maintaining inventory accounting. No deduction is allowed for contingency provisions and uncertain events that may affect the assets of firms, only deductions for actual losses are admitted.

In general, the legislation provides the linear depreciation method although other methods are allowed, if authorized by the tax administration. Once a depreciation method is selected, it must remain the same for a number of years. The rates range from 2.5% for property and buildings up to 33% for certain vehicles. Carry forwards losses from prior years is admitted for certain economic activities.

In general fiscal years coincide with the calendar year, providing companies a period of 120 days to submit the tax return and pay the remaining balance. During the current year quarterly payments are made on advance of the final tax, calculated on the basis of the calculated tax of previous year.

Mexico

The corporate tax of Mexico taxes residents following the worldwide income criterion, while non-resident individuals must pay the tax for Mexican source income. The tax rate has had several changes during the study period: 35% for 2000-2002, 34% in 2003, 33% in 2004, 30% in 2005, 29% in 2006, 28% for 2007-2009 and finally 30% in 2010.

Meanwhile the IETU, effective from 2007, imposes a rate of 17.5% on a taxable amount based more on the principle of what is perceived, with paid IRS working as credit against IETU. For the determination of tax liability for income tax purposes generally all necessary expenses to maintain and preserve the source are admitted, but deductions for tax penalties and fines are not admitted, nor donations, and losses for obsolescence, or some uncertain facts.

Depreciation of fixed assets is admitted as deduction for the determination of net income, for which the straight line method using fixed percentages is defined with rates ranging from 5% for real estate up to 30% for computer equipment. In some cases certain environmental assets can be fully depreciated in the year of their incorporation. The carry forwards loss from prior years, for a period of up to 10 years is also admitted.

The fiscal year always ends on December 31 of each year, setting a deadline of three months for submitting the tax return and the payment of the balance, establishing a system of payments on advance of the tax.

Nicaragua

The Nicaraguan corporate tax taxes income obtained within the country's territory, the source being extended to services used in Nicaragua including them in all cases. The tax is the greatest amount between 30% on net income and 1% of gross incomes for the year.

The taxable amount is calculated from the financial statements, which are prepared according to international accounting standards, which are set according to the legal provisions. For certain income earned by non-residents in Nicaragua, a percentage of it should be recognized, which will then be taxed at 30%. Within these areas are the sea or air transportation, international communications and insurance companies.

Regarding deductible expenses, all necessary expenses to obtain and maintain income source are admitted as deductions. Various inventory maintenance methods are authorized, as well as for the determination of sales costs, such as FIFO, LIFO or WAC. Provisions for non-recoverable debts are admitted up to a maximum of 1% of the inventory at the end of the year.

Fixed assets should be amortized according to the straight-line method with depreciation rates ranging from 3-5% for buildings up to 50% for certain computer equipment. For certain business activities tax rule allows accelerated depreciation. The Nicaraguan system provides losses from previous years be deducted from current period onwards, and up to 3 fiscal years.

In general, fiscal years run from July 1 to June 30 of the following year, although there are exceptions. A 90 days period for the submitting the tax return and payment of the balance is established, and monthly payments on advance of the annual tax equivalent to 1% of the monthly gross income have to be paid.

Panama

Corporations, branches of foreign entities, limited liability companies and other entities are subject to taxation on profits or income generated in Panama. The tax rate was 27.5% in 2010, having been fixed in 30% until the immediate previous year.

Among the most notable exceptions we find the income generated in the Colon Free Zone, which are taxed only when operations are performed with companies in Panamanian customs territory. Another peculiarity of the Panamanian system is tax incentives to the so-called regional headquarters. These are offices with management control in the region from Panama, from where they can also provide services to their parent company, subsidiaries or other affiliates in third countries. The headquarters can act as foreign companies registered in Panama or Panamanian corporations owned by transnational enterprises. These entities enjoy various benefits, including tax benefits. Especially in the CIT establishing the exemption from income tax, for services performed outside the country to their business group, which does not generate taxable income within the Republic of Panama.

Among other tax exemptions are those on income from maritime transportation by merchant ships of Panama, the results from holding or transfer of public securities, interest on deposits maintained in local banks, agricultural activities when revenues associated do not exceed a certain predefined threshold.

Regarding the temporary aspect of the tax generating event, the tax law provides that results should be recognized on accrual or receiving basis, establishing some exceptions such as construction activities, which are authorized to be recognized by project progression. All expenses necessary to maintain the source of income, whether they are domestic or foreign source, are admitted.

The regulation admits multiple depreciation methods. The minimum useful life is 3 years for assets and 30 for real estate. Organizational costs can be depreciated in five years. The legislation supports carry forwards losses from previous years by deducting 20% of the loss on each of the subsequent five years, with a cap of 50% of the yearly taxable base.

While the income tax in Panama is of annual determination, generally coinciding with the fiscal calendar year, the collection is made effective in quarterly installments.

Paraguay

The Income Tax of Legal entities in Paraguay applies to income derived by corporations and business enterprises within the Paraguayan territory. The system provides for an extension of the source of income for those capital income earned by companies domiciled in the country, so they are also within the scope of the tax. The rate was 30% until 2004. In 2005 it was reduced to 20% and from 2006 to the present it is 10%.

With regard to determination of income for tax purposes, they are based on the results stated in the financial statements to which the appropriate tax adjustments are applied. Expenses are deductible to the extent that they are applied to the activity of the company and to generate taxable income. The Paraguayan tax system provides for the valuation of inventories at acquisition or production costs. FIFO valuation systems and WAC are admitted, which must be maintained by taxpayers over time.

Deductions are allowed for depreciation of fixed capital, for which a straight-line method is established. Deduction on income of losses from previous years is not currently admitted. CIT is of annual determination, the fiscal year coinciding generally with the calendar year.

Peru

Residents in the country are subject to tax on all taxable income they obtain. In the case of non-residents, their branches, agencies or permanent facilities, the tax only applies to their Peruvian source income.

The current general tax rate has been fixed at 30% with the exception of the years 2002 and 2003. Dividends are taxed at an additional 4.1% on the distribution of benefits to non-residents and residents, which in general is withheld at the source. Dividends not delivered to resident companies are not taxed at 4.1%. There is a special income tax regime for small enterprises in which this tax only pays 1.5% of its monthly income.

The tax base is calculated from the accounting results and all necessary expenses to maintain the source of income are generally admitted. Thus on accounting results, additions and deductions are allowed to determine the income tax. The accounting profit is added to the amount of expenses that the law does not allow to be deducted or those which are subject to a limit which has been overcome, and subtract those which are not deducted according to accounting criteria but they are tax wise. Besides foreign source income is added only if the net result is positive.

There are various tax incentives regimes for investments, such as those in oil, gas licenses, mining companies and certain agricultural and agro-industrial activities, as well as investment in the Amazon geographical area. Moreover, general exemptions on industrial production performed in specific areas, such as in the country's border areas, are established.

Regarding depreciations, tax law allows companies to take a different approach to the legal one as long as it does not involve a shorter depreciation period than the one established by law.

The Peruvian tax system admits carry forward losses from previous years with two modes at the option of the taxpayer: carry forward losses for four years or indefinitely keep them with an annual limit of 50% of income before deduction.

While the income tax in Peru is an annual determination, collection is performed monthly through tax advance payments. With the filing of the annual tax return (usually in March and April of each year) the tax balance is completed.

Uruguay

CIT in Uruguay -IRAE- taxes income from developed economic activities as well as goods located or rights economically used in the country, both by resident entities and by non-resident entities with permanent facilities in the country. The proportional tax rate was 25% since 2008. Until 2007 the tax in force (IRIC) had a 30% tax rate, except for the period 2002-2004 where it was 35%.

The most relevant general exemption, according to the study of tax expenditures in this country, is the one that benefits economic activities in the Tax Free Zones, although the various tax exemptions accumulate an amount exceeding 50% of total tax collection.

The taxable income is calculated from the accounting results, which should be adjusted according to the requirements of the tax legislation of the country. In principle all expenses necessary to obtain and maintain income are admitted if they are properly documented and that are computable income for a taxation equivalent counterpart, otherwise they are only deductible for the proportion between both rates.

The tax loss of prior years' deduction is admitted with a time limit of five years.

Venezuela

Venezuelan companies and permanent businesses of non-residents entities are subject to tax on their net income. The tax legislation provides for an increasing scale of rates depending on the amount of income. The scales are measured in Tax Units (UT in Spanish), which annually update their legal value. The rates are 15%, 22% and 34% for income up to 2000 UT, 3000 UT, and from 3000 UT respectively.

The revenues of some specific activities are subject to some additional taxes, for example income from oil activities. The rate used to calculate the potential revenue in the analysis considers the economic impact of the activities subject to a specific tax as well as the different rates of the general regime.

For determining the taxable income the results are expressed in the financial statements based on general accounting principles. A number of adjustments are performed to give the tax results. For their deduction, those normal business expenses and income needed to obtain and retain the source are admitted, provisions for obsolescence or default as losses are not admitted for tax purposes. Depreciation for fixed assets is linear, not providing a specific useful life for each type of asset. The system also allows carry forwards of losses from previous years with a limit of three.

The tax is annually determined by filing a tax return with a regime of anticipated payments during the year and the reporting of the balance together with submission of the tax return.

Annex IV
CIT legal rates evolution: 2001-2005
In percentages

	Fiscal Year 2001	Fiscal Year 2002	Fiscal year 2003	Fiscal year 2004	Fiscal year 2005
Argentina	35.00	35.00	35.00	35.00	35.00
Bolivia	25.00	25.00	25.00	25.00	25.00
Brazil	Up to 240 000 reales: 15.00	Up to 240 000 reales: 15.00	Up to 240 000 reales: 15.00	Up to 240 000 reales: 15.00	Up to 240 000 reales: 15.00
	10.00	10.00	10.00	10.00	10.00
Chile	15.00	16.00	16.50	17.00	17.00
Colombia	35.00	35.00	35 y 3.5 effective overcharge (10.00 nominal)	35 y 3.5 effective overcharge (10.00 nominal)	35 y 3.5 effective overcharge (10.00 nominal)
Costa Rica	Gross Income over 32,320 mill. colones: 30.00	Gross Income over 36.127 mill. colones: 30.00	Gross Income over 39.617 mill. colones: 30.00	Gross Income over 43.183 mill. colones: 30.00	Gross Income over 49.043 mill. colones: 30.00
	Gross Income lower than 32.320 mill. colones: 20.00	Gross Income lower than 36.127 mill. colones: 20.00	Gross Income lower than 39.617 mill. colones: 20.00	Gross Income lower than 43.183 mill. colones: 20.00	Gross Income lower than 49.043 mill. colones: 20.00
	Gross Income lower than 16.067 mill. colones: 10.00	Gross Income lower than 17.960 mill. colones: 10.00	Gross Income lower than 19.695 mill. colones: 10.00	Gross Income lower than 21.468 mill. colones: 10.00	Gross Income lower than 24.381 mill. colones: 10.00
Ecuador	25.00	25.00	25.00	25.00	25.00
El Salvador	25.00	25.00	25.00	25.00	25.00
Guatemala	31.00	31.00	31.00	31.00	31.00 of net income
					5.00 of gross income
Honduras	Up to 200,000 lempiras: 15.00	Up to 200,000 lempiras: 15.00	Up to 200,000 lempiras: 15.00	25.00	25.00
	The excess over 200,000: 30.00	The excess over 200,000: 30.00	The excess over 200 mil: 25.00 (not accumulative)		
Mexico	35.00	35.00	34.00	33.00	30.00
Nicaragua	25.00	25.00	25.00	30.00	30.00
Panama	30.00	30.00	30.00	30.00	30.00
Paraguay	30.00	30.00	30.00	30.00	20.00
Peru	30.00	27.00	Legal entity: 27.00; The others: 30.00	30.00	30.00
Dominican Republic	25.00	25.00	25.00	25.00	25.00
Uruguay	30.00	35.00	35.00	30.00	30.00
Venezuela	Up to 2000 UT: 15.00	Up to 2000 UT: 15.00	Up to 2000 UT: 15.00	Up to 2000 UT: 15.00	Up to 2000 UT: 15.00
	For the excess over 2000 and up to 3000 UT: 22.00	For the excess over 2000 and up to 3000 UT: 22.00	For the excess over 2000 and up to 3000 UT: 22.00	For the excess over 2000 and up to 3000 UT: 22.00	For the excess over 2000 and up to 3000 UT: 22.00
	For the excess of 3000 UT: 34.00	For the excess of 3000 UT: 34.00	For the excess of 3000 UT: 34.00	For the excess of 3000 UT: 34.00	For the excess of 3000 UT: 34.00

Source: CIAT, IBDF, Countries legislation
Prepared by: author

Annex IV
CIT legal rates evolution: 2006-2010
In percentages

	Fiscal year 2006	Fiscal year 2007	Fiscal year 2008	Fiscal year 2009	Fiscal year 2010
Argentina	35.00	35.00	35.00	35.00	35.00
Bolivia	25.00	25.00	25.00	25.00	25.00
Brazil	Up to 240 000 reales: 15.00	Up to 240 000 reales: 15.00	Up to 240 000 reales: 15.00	Up to 240 000 reales: 15.00	Up to 240 000 reales: 15.00
	10.00	10.00	10.00	10.00	10.00
Chile	17.00	17.00	17.00	17.00	17.00
Colombia	35 y 3.5 effective overcharge (10.00 nominal)	34.00	33.00	33.00	33.00
Costa Rica	Gross Income over 55.943 mill. colones: 30.00	Gross Income over 62.444 mill. colones: 30.00	Gross Income over 67.791 mill. colones: 30.00	Gross Income over 78.231 mill. colones: 30.00	Gross Income over 82.698 mill. colones: 30.00
	Gross Income lower than 55.943 mill. colones: 20.00	Gross Income lower than 62.444 mill. colones: 20.00	Gross Income lower than 67.791 mill. colones: 20.00	Gross Income lower than 78.231 mill. colones: 20.00	Gross Income lower than 82.698 mill. colones: 20.00
	Gross Income lower than 27.811 mill. colones: 10.00	Gross Income lower than 31.043 mill. colones: 10.00	Gross Income lower than 33.701 mill. colones: 10.00	Gross Income lower than 38.891 mill. colones: 10.00	Gross Income lower than 41.112 mill. colones: 10.00
Ecuador	25.00	25.00	25.00	25.00	25.00
El Salvador	25.00	25.00	25.00	25.00	25.00
Guatemala	31.00 of net income	31.00 of net income	31.00 of net income	31.00 of net income	31.00 of net income
	5.00 of gross income	5.00 of gross income	5.00 of gross income	5.00 of gross income	5.00 of gross income
Honduras	25.00	25.00	25.00	25.00	25.00
Mexico	29.00	28.00	28.00	28.00	30.00
Nicaragua	30.00	30.00	30.00	30.00	30.00
Panama	30.00	30.00	30.00	30.00	27.50
Paraguay	10.00	10.00	10.00	10.00	10.00
Peru	30.00	30.00	30.00	30.00	30.00
Dominican Republic	30.00	25.00	25.00	25.00	25.00
Uruguay	30.00	30.00	25.00	25.00	25.00
Venezuela	Up to 2000 UT: 15.00	Up to 2000 UT: 15.00	Up to 2000 UT: 15.00	Up to 2000 UT: 15.00	Up to 2000 UT: 15.00
	For the excess over 2000 and up to 3000 UT: 22.00	For the excess over 2000 and up to 3000 UT: 22.00	For the excess over 2000 and up to 3000 UT: 22.00	For the excess over 2000 and up to 3000 UT: 22.00	For the excess over 2000 and up to 3000 UT: 22.00
	For the excess of 3000 UT: 34.00	For the excess of 3000 UT: 34.00	For the excess of 3000 UT: 34.00	For the excess of 3000 UT: 34.00	For the excess of 3000 UT: 34.00

Source: CIAT, IBDF, Countries legislation
Prepared by: author

international tax compact

initiative to strengthen international cooperation with developing countries to fight tax evasion and tax avoidance