Tax Administration REVIEW

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EDITORIAL POLICY

The Technical Cooperation Agreement signed by CIAT and the State Secretariat of Finance, the State Agency of Tax Administration (AEAT) and the Institute of Fiscal Studies (IEF) of Spain, provided for the commitment of editing a review that would serve to disseminat the different tax approaches in force in Latin America and Europe.

An Editorial Board formed by CIAT officials (the Executive Secretary, the Director of Tax Studies and Research, the Director of Training & Human Talent Development and Head of the Spanish Mission) is responsible for determining the topics and selecting the articles for each edition of the Review.

The articles are selected, through a public announcement made by the CIAT Executive Secretariat for each edition of the review. It is open to all officials of the Tax, Customs Administrations and/or Ministries of Economy and Finance of the CIAT member countries and associate member countries. Likewise, those members of the MyCiat Community not belonging to any of the aforementioned entities may also participate, following evaluation by the Editorial Council.

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Content

Editorial

Dear Readers,

We are pleased to present to all the tax administrations officials of the members and associates member countries of our organization and, in general, to the entire international tax community, the Tax Administration Review that is published as part of the Technical Cooperation Agreement that CIAT maintains with the State Secretary of Finance, the Institute of Fiscal Studies (IEF) and the State Agency for Tax Administration (AEAT) of Spain.

This edition presents (9) articles: Uniecuational forecasts for tax revenues of Honduras; Taxpayers' rights within the framework of mutual assistance; The challenges of tax administrations facing the future of work in the new reality; Work of multilateral agencies against abusive tax practices across the world – A study from an Indian perspective; E-commerce in developing countries (the case of Angola); Permanent committee on cadastre in Ibero-america: Cooperation in the service of real estate taxation and sustainable development; Digital economy: first estimate for Ecuador; Tax reform in the Republic of Paraguay and; Challenges and competences necessary to officials of the 21st century tax administration.

We appreciate the great reception given to the call to submit contributions for this edition of the Tax Administration Review.

We reaffirm our commitment to disseminate information of interest that contributes to learning and stimulates the transfer of useful knowledge for the international tax community.

Márcio Ferreira Verdi
Director of the Review

UNIECUATIONAL FORECASTS

for Tax Revenues of Honduras

José Carlo **Bermúdez**

SYNOPSIS

This paper presents an autoregressive distributed lag model (ARDL) to forecast the tax revenues in Honduras using energy and economic activity data. From the cointegration methodology we find the presence of a long-term relationship between the analyzed variables. The predictive capacity of this model is tested and compared with ten different specifications of uniecuational models. The results suggest that the ARDL model is the best performing within the sample. In fact, for the four time horizons evaluated, the different specifications of ARDL models seem to exceed the predictive capacity of the models estimated using the box-Jenkins methodology, except for the one-quarter horizon, in which an ARIMA model offers better projections.

CONTENT

AUTHOR

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INTRODUCTION

The projection of tax revenues is one of the most important tasks when defining the guidelines for a country's budgetary policy. In this sense, the projection offices of the ministries of finance or tax administrations usually set collection thresholds for periods not exceeding one year, although financial programming usually includes tax forecasts longer than that horizon, and the types of projections can be simulation, prediction and establishing goals (Martín et al., 2012, pp. 11-12). Although there is no widely accepted specific methodology for making the best estimates of revenue (as it is subject to multiple idiosyncratic factors in each country's economy and tax rules), it seems that, in fact, the direct method, mechanical extrapolation, the application of elasticity, buoyancy and, to a lesser extent, econometric time series models predominate.

In the case of the direct method, estimates are usually made under the consideration of detailed tax information and with a preponderant application of the expert judgment. Mechanical extrapolation usually implies that in the following period the collection will have a behavior similar to that observed in past periods, i.e., an important bias towards a deterministic pattern in the collection. Elasticities[1], which find their genealogy in the pioneering work of Groves and Kahn (1952), refer to the percentage variations experienced by tax collections in response to movements in their tax bases and are usually estimated using the co-integration methodology proposed by Engle and Granger (1987). These elasticities are included in a buoyancy equation also known as a reaction function, which allows the desired tax to be extrapolated for the next period. Similarly, econometric estimates of time series allow predicting collection by applying the methodology of Box and Jenkins (1973), either modeling taxes as an autoregressive process (AR(p)), Moving Average (Ma(q)) or combined (ARIMA (p, q)).

The income Administration Service (SAR) has used the methods previously stated for different simulation and forecasting exercises, however, the predictive capacity of these methodologies has not been evaluated in depth so far. Accordingly, the purpose of this document is to analyze tax revenue estimates for Honduras based strictly on the time series econometric methodology. Therefore, a uniecuational Autoregressive Distributed Gap (ARDL) model is estimated following the Pesaran and Shin (1999) and Pesaran et al. cointegration methodology. (2001) allowing to identify the short-and long-term relationship between the collection of tax revenues with the supply and demand of the economy, at least in a loose sense. Glenday (2013) calls this line of models *GDP based models*. (*Gross Domestic Product based models*).

It should be noted that the estimated ARDL model excludes components of tax legislation beyond those that are implicit in the process of generating collection data, nor does it include variables considered as taxable bases, whether of a domestic and/or external nature[2]. Thus, a parsimonious and application model has been chosen for total tax revenues (collected by the SAR and the customs administration[3]) in such a way that a robust analysis framework can be offered by comparing different uniecuational econometric specifications, as other previous works have done (See e.g. Streimikiene et al. (2018)). However, the construction of a more complex structural model that considers different macroeconomic and tax regulatory interrelations is part of the future research agenda.

The wealth of this study focuses on the possibility of comparing the most suitable econometric model for short-term SAR forecasting and simulation exercises within 11 different specifications. This is not a minor exercise, especially when there does not seem to be a specific consensus in the literature for the projection of fiscal variables, as some authors identify the presence

1 See Cardoza (2017) for empirical evidence on estimates of tax revenue elasticities and buoyancy for some CIAT (Inter-American Center of Tax Administrations) member countries and Lagravinese et al. (2020) for OECD (Organisation for Economic Cooperation and Development) member countries.

2 Cerda et al. (2019b) find that including external variables such as the exchange rate and oil prices may be important to explain forecasting errors in the projections of tax revenues of commodity-exporting countries.

3 After the abolition and liquidation of the Revenue Executive Directorate (DEI) by Executive Decree Number PCM-083-2015, both administrations were separated.

of a high positive bias in the projections, which tends to increase in periods of strong economic expansion and is even greater when medium-term forecasts are reviewed (Frankel, 2011); in contrast, others find that GDP-based projection models tend to be pessimistic, especially in phases of below-average growth (Brender and Navon, 2010). This reinforces the importance of this work as it also opens the doors for external technicians to review and identify possible points of improvement to the methodology presented.

The document continues as follows: section 2 develops the specification of the econometric models to be used; section 3 presents the analysis of the data; section 4 sets out in detail the results of the estimates, finally, section 5 offers the conclusions.

1. ECONOMETRIC SPECIFICATION

1.1 ARDL model

Following Pesaran and Shin (1999) and Pesaran and Shin (2002), an ARDL model is used as the basis for predicting tax revenues in Honduras. In this sense, the *bounds test* methodology developed by Pesaran et al. (2001) makes it possible to identify a co-integration relationship between various economic variables over time without taking into account the characteristics of the data-generating process, that is, regardless of their order of integration, which is relevant when making estimates with standard inference methods whose asymptotic properties are sensitive to the presence of unitary roots. In addition, this technique is a desirable option compared to that of Engle and Granger (1987) since the latter involves performing a zero frequency analysis to identify that the variables to be included within the error correction model have the same order of integration, opening way to the potential identification of spurious trends that nullify the subsequent economic and predictive analysis. The ARDL model (p, q) to estimate is defined as its partial adjustment form:

$$T_t = c_0 + c_1 t + \sum_{i=1}^{p} \phi_i T_{t-i} + \sum_{i=0}^{q} \beta'_i \mathbf{x_{t-i}} + u_t \qquad (1)$$

Where $p \geq 1$ and $q \geq 0$; T_t are the tax revenues in levels; c_0 and c_1 are coefficients; t is a linear trend of the type $t = \{1, 2, 3, \ldots, n\}$ being $n \subset \mathbf{N}$ the size of the sample used; x_{t-i} is a size vector $k \times 1$ containing the variables that explain tax collection, while $u_t \sim N(\mu, \sigma^2)$ are the errors of the model as they are considered uncorrelated. It should be mentioned that the vector $x_{t-i} \equiv x'_t = \{y_t, en_t\}$ includes data on economic activity (y_t) and electricity (en_t) to approximate the demand and supply of the economy. Models for the projection of previous tax revenues include production data and sources of external volatility such as the exchange rate and oil prices (see Cerda et al. (2019a)), however, for the purposes of the estimates at this time, although a variable that approximates economic activity is included, external variables are excluded by adding energy consumption to approximate the production costs of the economic agents, which is discussed more broadly in Section 3.

The methodology of Cointegration in levels of Pesaran and Shin (1999) and Pesaran and Shin (2002) requires an adequate identification to the dynamics of the model, which is possible by knowing the number of optimal lags (p, q) of equation 1. However, it should be borne in mind that the vector x_{t-i} includes two explanatory variables, so the lag structure is of the type (p, q, d). For this purpose, the Akaike information criterion (AIC) is used.

Once the optimal lag structure of the ARDL model is known, the presence of cointegration in levels should be verified using the limit test of Pesaran et al. (2001). To do this, it is advisable to reparametrize Equation 1 in its error correction form, which is known as conditional error correction model (CEC), as follows:

$$\Delta T_t = c_o + c_1 t + \alpha(T_{t-1} - \theta \mathbf{x_{t-i}}) + \sum_{i=1}^{p-1} \psi_{Ti} \Delta T_{t-i} + \omega' \Delta \mathbf{x_t} + \sum_{i=0}^{q-1} \psi_{\mathbf{X}i} \Delta \mathbf{x_{t-i}} + u_t \quad (2)$$

Note that in the preceding equation is included the parameter $\alpha = 1 - \sum_{j=1}^{p} \phi_j$ which comes from operating Equation 1 for the variable T_t and serves as the error correction parameter that captures the model's adjustment speed, which, in other words, is the speed at which tax revenues and their explanatory variables return to their long-term equilibrium or steady state. Similarly, $\theta = \frac{\sum_{i=1}^{q} \beta_i}{\alpha}$ is a vector that contains the long-term parameters for each of the explanatory variables and since $\theta < \infty$, the shocks of the variables contained in x'_t are transient (finite) on tax revenues.

It is important that u_t in equation 2 are uncorrelated and have constant variance (homocedasticity), otherwise the estimators will be inefficient, although unbiased and consistent. Another condition necessary before verifying the presence of cointegration in Model 2 is that the characteristic roots $1 - \sum_{j=1}^{p} \phi_j$ are within the unit circle, however, this condition is not directly verifiable, so the stability is corroborated by the presence of cointegration using an F Test against the critical values of Pesaran et al. (2001), these values imply a test of hypotheses in which if the value of the statistics F is located under the critical value for $I(0)$, then the presence of cointegration is not verified, however if said value F is located above the upper limit critical values $I(1)$ a long-term relationship appear between T_t and x'_t.

Next, the methodology allows proceeding with the analysis of inference and forecast considering a dynamic model that represents an optimal structure. That said, the final equation on which the projection estimates of tax revenues for Honduras are based is given by:

$$T_t = c_0 + c_1 t + \sum_{i=1}^{s} \gamma_i D_{it} + \sum_{i=1}^{p} \phi_i T_{t-i} + \sum_{i=0}^{q} \varphi_i en_{t-i} + \sum_{i=0}^{d} \delta_i y_{t-i} + \varepsilon_t \quad (3)$$

Since Equation 3 is estimated with variables re-scaled in levels (applying natural logarithm) and with a monthly frequency D_{it} is included, as a vector of seasonal *dummies* where s = {1 if t = January and 0 other month,…,1 if t = December and 0 other month}. However, at the time of making the estimates, only $s/2$ *dummies variables* are used in order to avoid falling into the trap of fictitious variables, which could result in perfect multicollinearity.

1.2 Complementary Models

As indicated at the beginning of this paper, the exercise consists in comparing the accuracy of the forecasts obtained by the ARDL model with respect to a series of alternative econometric specifications, for this purpose, I estimate five different autoregressive models applying the methodology of Box and Jenkins (1973) as follows:

Table 1. Additional model specifications

MODEL	SPECIFICATION
AR (p)	$T_t = \phi_0 + \sum_{i=1}^{p} \phi_i T_{t-p} + v_t \quad (4)$
MA (q)	$T_t = \theta_0 + \sum_{i=1}^{q} \theta_i \epsilon_{t-q} + u_t \quad (5)$
ARIMA (p, q)	$T_t = c_0 + \sum_{i=1}^{p} \phi_i T_{t-p} + \sum_{i=1}^{q} \theta_i \epsilon_{t-q} + u_t \quad (6)$
ARIMAX (p, q)	$T_t = \alpha_0 + \alpha_1 y_t + \sum_{i=1}^{p} \phi_i T_{t-p} + \sum_{i=1}^{q} \theta_i \epsilon_{t-q} + u_t \quad (7)$ $T_t = \beta_0 + \beta_1 en_t + \sum_{i=1}^{p} \phi_i T_{t-p} + \sum_{i=1}^{q} \theta_i \epsilon_{t-q} + u_t \quad (8)$

Source: *Own elaboration based on Box and Jenkins (1973).*

1.3 Assessment of prognostics

In order to verify which model offers the best predictive possibilities, the time series literature proposes a series of measures, this work uses the following ones:

Table 2. Measures to assess prognostics

Root of Mean square Error (RECM) =	$\sqrt{\frac{1}{n}\sum_{h=1}^{n}(T_{t+h} - \hat{T}_{t+h})^2}$
Mean absolute Error (EAM) =	$\frac{1}{n}\sum_{h=1}^{n} \lvert T_{t+h} - \hat{T}_{t+h} \rvert$
Mean absolute percentage Error (EPAM) =	$\frac{1}{n}\frac{\sum_{h=1}^{n} \lvert T_{t+h} - \hat{T}_{t+h} \rvert}{T_{t+h}}$
Theil inequality coeficient (THEIL) =	$\frac{RECM}{\sqrt{\frac{1}{n}\sum_{h=1}^{n}\hat{T}_{t+h}^2} + \sqrt{\frac{1}{n}\sum_{h=1}^{n}T_{t+h}^2}}$

Source: *Own elaboration.*

At this point it should be borne in mind that T_{t+h} it is the tax revenue variable, while $t + h$ is the monthly forecast horizon, on which each measure is evaluated, for the present analysis forecasts are made for h = 1,3,6,12 months, respectively: The lower the results of the different evaluation measures (RECM, EAM, EPAM and Tehil), the better the prognosis adjustment in the evaluated model.

2. DATA ANALYSIS

For the estimation of the ARDL model we use data from the total tax collection (T_t) which is the sum of the most Customs internal taxes, the product (y_t) is approximated by the monthly index of economic activity (IMAE) and the energy consumption (en_t) is approximated by the total energy sales measured in megawatts per hour (Mwh). The collection data have been taken from records of the SAR, the IMAE is obtained from the System of Macroeconomic Information and Financial of the Region (SIMAFIR) published by the Executive Secretariat of the central American Monetary Council (SECMCA) and finally, the energy data have been taken from the statistical bulletins monthly published by the National Electricity Company (ENEE)[4]. Data is organized on a monthly frequency with a sample spanning from January 2007 to December 2019 (2007m1-2019m12). All variables have been rescaled in logarithms (see annex 6.1).

The use of IMAE and energy sales as explanatory variables for the collection responds to the intention to approximate the productive dynamics in general. In this sense, the IMAE, being a high frequency indicator, is expected to capture the trajectory of aggregate production, while energy sales can serve as a proxy to the supply behavior of the economy that affects the average production costs. In order to characterize the interconnection between these variables and tax collection, a simple *rolling correlations* exercise is proposed for a twelve-month mobile window calculated as:

$$\hat{\rho}_t^1(n) = \frac{\hat{\sigma}_{Ty,t}(n)}{\hat{\sigma}_{T,t}(n)\hat{\sigma}_{y,t}(n)} \quad (9)$$

$$\hat{\rho}_t^2(n) = \frac{\hat{\sigma}_{Ten,t}(n)}{\hat{\sigma}_{T,t}(n)\hat{\sigma}_{en,t}(n)} \quad (10)$$

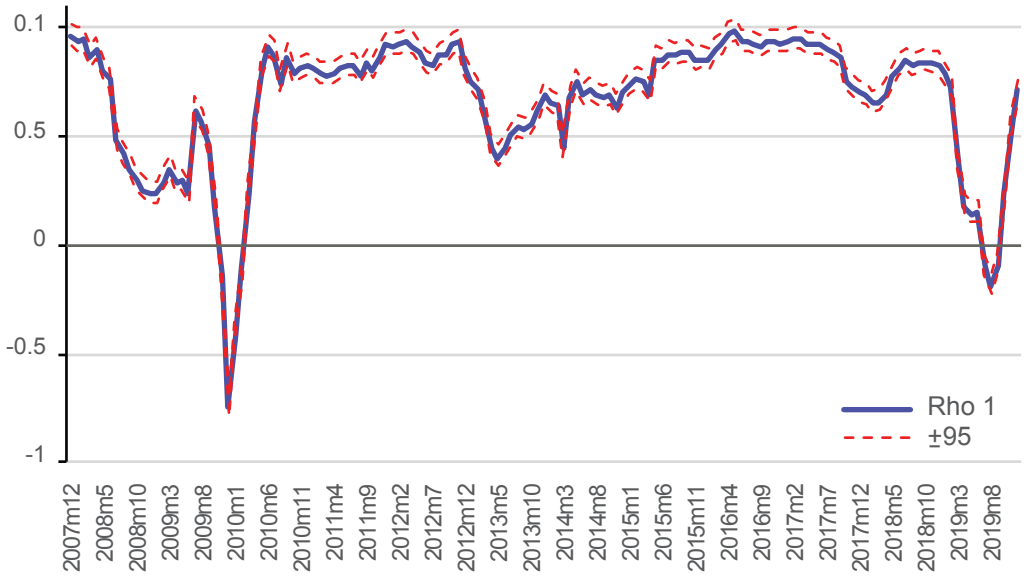
$$t = n, n+1, \dots, N$$

Where $\hat{\rho}_t^1(n)$ is the *rolling correlation* between the collection and the IMAE, while $\hat{\rho}_t^2(n)$ is the rolling correlation between the collection and the energy sales. The panel in Figure 1 shows the correlations obtained next to a 95% confidence interval. As a first relevant fact, the results suggest that the relationships between revenue and economic activity and energy sales have not been constant throughout the sample used. Specifically, in the case of the IMAE there is a marked change in the correlation pattern throughout 2009 as a result of the global economic recession, for the moving window of 2019 the correlation again exhibited a coefficient less than zero possibly reflecting the slowdown of the national economy as a result of lower prices in raw materials and the slowdown in tax pressure. Apart from the events described, the correlation remains statistically significant in the majority of the sample and very close to the unit, with an average of 0.7. On the other hand, when reviewing the correlation between tax collection and energy sales, a more irregular pattern is perceived, although in most of the sample the interrelation is statistically significant; interestingly, after the 2009 crisis it became more common to observe windows with coefficients less than zero, in fact, the average for the entire period amounts to 0.2.

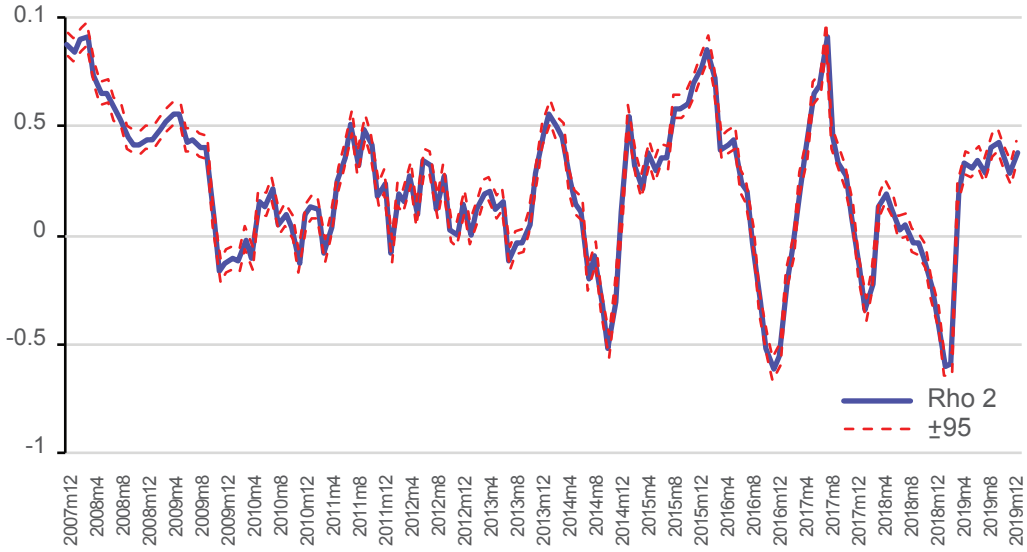
4 See http://www.enee.hn/index.php/planificacionico8no/182-boletines-estadisticos. Total energy sales is the sum of sales to the residential, commercial, industrial, high consumers, Public Lighting, government, autonomous entities and municipal sector.

Graph 1. Mobile revenue correlations

Graph 1a. Revenue correlation-IMAE



Graph 1b. Revenue Energy Correlation



Source: *Own estimates based on SAR, SIMAFIR and ENEE data for a 12-month moving window. The confidence intervals calculated as* $\hat{\rho}_t^i(n) \pm z_\alpha \frac{\sigma}{\sqrt{n}}$ *where* z_α *= 1.96 given a normal distribution;* $\frac{\sigma}{\sqrt{n}}$ *is the standard error of* $\hat{\rho}_t^i$ *with* $i \in \{1,2\}$ *calculated by bootstrapping with 400 repetitions. Thus, the value of the upper standard error is the average of the upper interval obtained in the resampling, same case for the lower standard error. Correlations are calculated on seasonally adjusted variables using TRAMO-SEATS and logarithms.*

2.1 Unit Root Test

Although the methodology for estimating the ARDL model using limit tests does not imply that the variables included within the model have the same order of integration as a *sine qua non condition*, It is still necessary to know the type of trend that they have because the critical values of Pesaran et al. (2001) are not applicable to variables with an order of integration greater than two T_y, y_t, $en_t \sim I(d)$; $d < 2$). In this sense, one of the greatest risks implicit in the application of any unit root test is the identification of spurious trends, especially in the presence of structural changes or when a large sample is not available. Alternatively, this work is based on the routine of Dolado et al. (1990), whose algorithm involves estimating three different specifications from the Dickey and Fuller test (1979). Table 3 shows the results, concluding that the three variables are stationary in trend (T_y, y_t, $en_t \sim I(0)$), so the ARDL model includes a deterministic component (t) that allows to remove the linear trend guaranteeing the stationarity of the variables.

Table 3. Unit root test

VARIABLE	LAGS	REGRESSOR	CONSTANT AND TREND	CONSTANT WITHOUT TREND	WITHOUT CONSTANT AND WITHOUT TREND	I (d)
		T_{t-1}	-0.0576 (-1.79)	-0.0011 (-0.17)	0.0012 (4.07)	
		ΔT_{t-1}	-0.3069 (-3.70)	-0.3404 (-4.18)	-0.3417 (-4.21)	
T_t	2	ΔT_{t-2}	-0.1055 (-1.30)	-0.1262 (-1.55)	-0.1268 (-1.57)	$I(0)$
		c_0	0.4648 (1.83)	0.0198 (0.37)		
		t	0.0005 (1.79)			
		y_{t-1}	-0.1228 (-2.35)	-0.0012 (-0.16)	0.0009 (4.19)	
		Δy_{t-1}	-0.4816 (-5.38)	-0.5688 (-6.88)	-0.5703 (-6.93)	
y_t	3	Δy_{t-2}	-0.1093 (-1.14)	-0.1699 (-1.81)	-0.1708 (-1.83)	$I(0)$
		Δy_{t-3}	0.0839 (1.02)	0.0496 (0.60)	0.0494 (0.60)	
		c_0	0.6241 (2.36)	0.0117 (0.28)		
		t	0.0003 (2.35)			
		en_{t-1}	-0.6145 (-6.77)	-0.1035 (-2.51)	0.0002 (0.58)	
en_t	1	Δen_{t-1}	-0.0053 (-0.07)	-0.2621 (-3.35)	-0.3126 (-4.06)	$I(0)$
		c_0	7.925 (6.77)	1.352 (2.51)		
		t	0.0012 (6.16)			

Source: *Own estimates with data from SAR, SIMAFIR and ENEE following the methodology of Dolado et al. (1990). The estimated t statistic is presented in parentheses. The number of lags is obtained using the Bayesian information criteria (BIC) and Akaike criteria (AIC). The critical values for each equation are -3,443, -2,886 and -1,950 respectively, for 95% confidence.*

3. RESULTS

3.1 ARDL model

In first instance, Equation 1 is assessed to identify the appropriate ARDL structure (p, q, d). Using the information criterion AIC and after 100 iterations it was concluded that the best model has the type specification (3, 3, 2), this allowed estimating immediately the CEC model exposed through Equation 2. This model is obtained by means of Ordinary Lesser Squares (OLS) and its results are presented in table 4 which proved to have uncorrelated and homocedastic errors (see tables 9 and 10 of annex 6.2), necessary conditions to guarantee efficient estimators. Thus, the test of limits of Pesaran et al. (2001) that estimates both an F-*test* as a t-test for the significance of the coefficient of error correction $\alpha = 1 - \sum_{j=1}^{p} \phi_j$ suggests the presence of a cointegration relationship in levels between the income tax, the IMAE and energy sales in Mwh since the absolute values estimated for the F-test and t-test exceed the critical values of the limits for the threshold $I(1)$ (See table 11 of annex 6.2). This evidence confirms a stable long-term relationship between the variables under study.

The estimate for the error correction coefficient has the expected sign and appears to be statistically significant, so it is possible to affirm that the model shows an adjustment rate of 69% after tax revenues experience some deviation from their steady state value. The magnitude in the adjustment speed is consistently high for a model that is estimated at a monthly frequency. On the other hand, the long-term coefficients (θ) of the error correction model indicate that energy has a greater magnitude in the balancing effect on revenue than that presented by the IMAE. This may suggest that supply shocks in the economy have a greater impact on the long-term path of collection compared to the effect of demand shocks that by construction are usually very short-term, which is why the long-term coefficient of the IMAE is close to zero and does not reject the null hypothesis of being statistically equal to zero (not significant). However, this reflection should be tested by an econometric methodology that is beyond the scope of this research.

Table 4. ARDL Model estimates (3,3,2)

ECUACIÓN 2		ECUACIÓN 3	
T_{t-1}	-0.68884 (0.1576)*	T_{t-1}	-0.0112 (0.0732)
ΔT_{t-1}	-0.3224 (0.1037)**	T_{t-2}	0.0651 (0.0683)
ΔT_{t-2}	-0.2573 (0.0628)*	T_{t-3}	0.2573 (0.0628)
en_{t-1}	1.6134 (0.3700)*	en_t	0.6062 (0.3183)***
Δen_t	0.6063 (0.3183)***	en_{t-1}	0.1422 (0.2746)
Δen_{t-1}	-0.8649 (0.3055)**	en_{t-2}	0.3823 (0.2493)
Δen_{t-2}	-0.4826 (0.2133)***	en_{t-3}	0.4826 (0.2133)
y_{t-1}	-0.0305 (0.5519)	y_t	0.7696 (0.4924)
Δy_t	0.7696 (0.4925)	y_{t-1}	-0.1289 (0.5621)
Δy_{t-1}	0.6713 (0.3219)***	y_{t-2}	-0.6713 (0.3219)***
$D_{1,t}$	0.0835 (0.0779)		
$D_{4,t}$	0.7056 (0.0619)*		
$D_{6,t}$	0.3224 (0.0505)*		
$D_{8,t}$	-0.0669 (0.0429)		
$D_{10,t}$	-0.0653 (0.0389)***		
$D_{12,t}$	0.3189 (0.0477)*		
t	0.0027 (0.0017)		
c_0	-15.324 (4.8822)**		

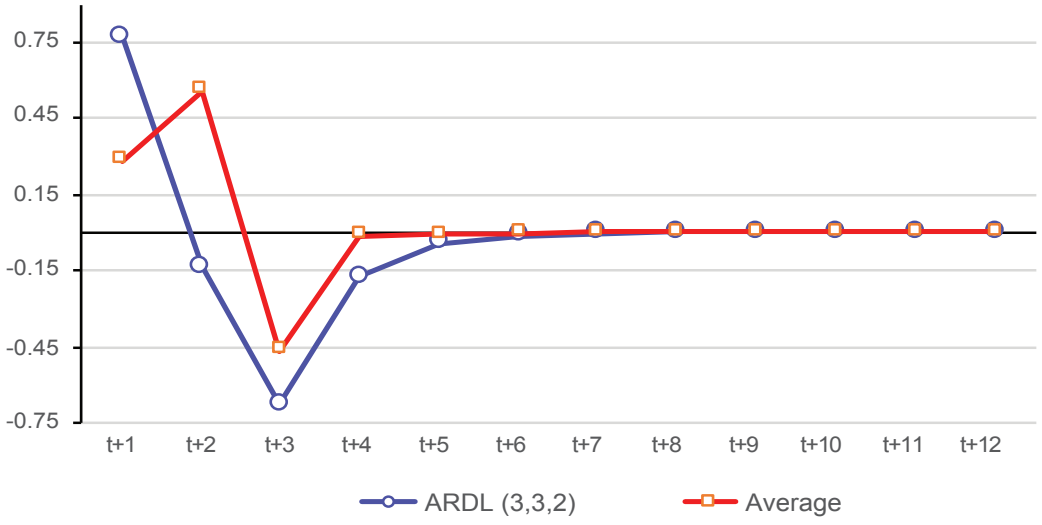
Source: *Own estimates. Robust standard errors using the Newey-West method are presented in parenthese. (*) Represents significance; *1%, **5%, ***10%.*

In contrast, the short-term coefficients proved to be statistically significant and with the expected sign, while the increase in energy sales has a negative impact on revenue, while the IMAE does so in a

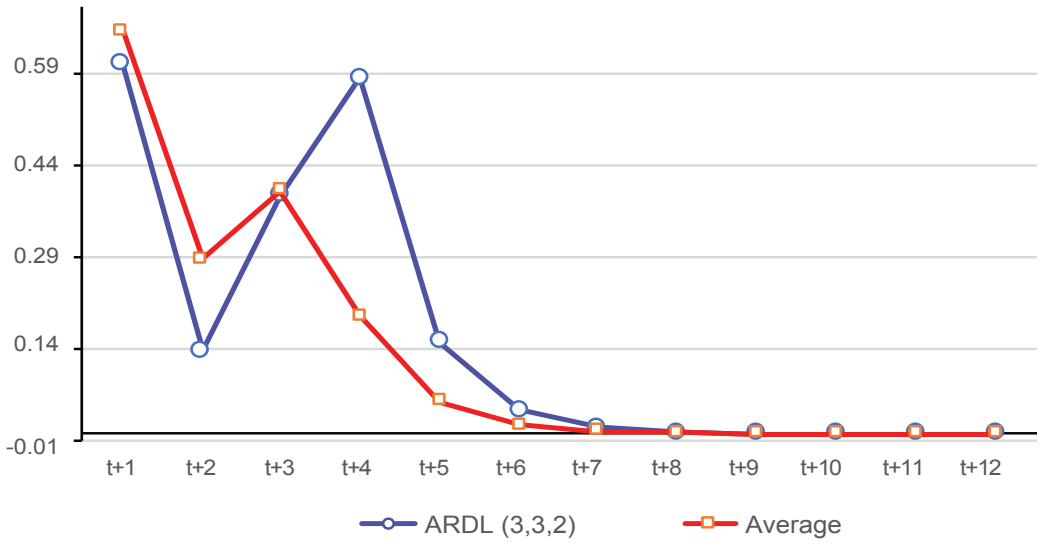
positive way. However, when estimating the multiplier effect[5] for both exogenous variables (see Graph 2), a relevant peculiarity is verified since the effect of the IMAE is positive only at the same time (in $t = 1$) and then becomes less than zero in the third period until it begins to converge after a semester. In contrast, energy sales exhibit a positive multiplier effect on short-term revenue to converge to zero after seven months. As a robustness exercise, we also include the average multiplier effect thrown by the six ARDL specifications (p, d, q) making combinations for the number of optimal lags $(p, d \in \{1, 2, 3\}, q \in \{1, 2\})$.

Graph 2. Estimated Multiplier Effects

Graph 2a. IMAE multiplier



Graph 2b. Energy multiplier



Source: *Own estimates based on Equation 3. The red line corresponds to the arithmetic average of the multiplier effect calculated from the six different specifications for each k occurrence of lag, as follows: ARDL (1, 1, 1), ARDL (1, 1, 2), ARDL (2, 2, 1), ARDL (2, 2, 2), ARDL (3, 3, 1) and ARDL (3, 3, 2)..*

5 See annex 6.3 for more details on how the multiplier of each variable is calculated on the tax income.

3.2 Forecast Analysis

This section details the evaluation of the forecasts estimated by the 11 models used for different time horizons (h), specifically 1, 3, 6 and 12 months. The first forecast $h = 1$ is actually a static in-sample forecast, usually known in the literature as *one step ahead forecast*, the remaining 3 projections correspond to dynamic out-of-sample forecasts. To compare the predictive capacity of each model, the statistic tools listed in Section 2.3 are used, where the lowest of these indicates the model with the best adjustment.

When reviewing the adjustment of the different models for $h = 1$ (see Table 5), it can be seen that the model that experiences the best in-sample adjustment for tax revenues is the ARDL (3,3,2) which has been precisely estimated through the cointegration methodology in levels, because this model seems to replicate adequately the process data generator of tax revenues (see annex 6.4). However, when comparing the different assessment measures, it was found that the best performing forecasts for a 3-month horizon (see Table 6) is an ARIMA (3,3). Similarly, for a six-month horizon, the best performing models are the ARIMA (3,3) and the ARDL (1,1,1). Finally, pair forecasts of an even greater horizon (one year) both the ARDL (3,3,1) and the ARDL (3,3,2) are the ones that showed the best predictive capacity.

Based on the above, some generalities can be identified; first, the ARDL (p, d, q) models estimated with the cointegration methodology appear to offer the best predictive performance compared to standard autoregressive models estimated with the Box-Jenkins methodology, except for a time horizon of one quarter. Second, although the methodology of co-integration in levels is the one that seems to capture more adequately the process of generating collection data within the 11 models analyzed, none of them adequately predicts the months with maturities of payments on account[6]. This is possible even if the projections include figures for internal and customs taxes, since the dates that cannot be replicated by the models coincide precisely with seasonalities only visible in months with maturities of payments on account (June, September and December). Faced with this fact, one should think about a research agenda on forecasts that addresses more stylized macro econometric methodologies that timely model this type of particularities or explore different forecasting tools based on micro-simulations for taxes with lower frequency maturities.

6 In accordance with Article 2 of the Income Tax (ISR) Anti-Evasion Law (Decree 96-2012 of 20 June 2012), taxable persons subject to IT and meeting certain conditions, in accordance with the procedure established in Articles 27, 29 and 34 of the current ISR Law (Decree Law No. 25), are subject to advance payments on a quarterly basis referred to as “payments on account”.

Table 5. Evaluations of forecasts for 1 month (h=1)

MODEL	RECM	EAM	EPAM	THEIL
AR (3)	0.3915	0.3244	0.0353	0.9921
MA (8)	0.3379	0.2721	0.0321	0.8269
ARIMA (3,3)	0.2678	0.2036	0.0238	0.6628
ARMAX (2,1)	0.2478	0.1963	0.0229	0.6255
ARMAX (1,1)	0.3074	0.2514	0.0295	0.7593
ARDL (1,1,1)	0.1401	0.1052	0.0123	0.3479
ARDL (1,1,2)	0.1341	0.1037	0.0122	0.3333
ARDL (2,2,1)	0.1326	0.1038	0.0122	0.3282
ARDL (2,2,2)	0.1306	0.1019	0.0119	0.3241
ARDL (3,3,1)	0.1222	0.092	0.0107	0.2995
ARDL (3,3,2)	**0.1206**	**0.0912**	**0.0106**	**0.296**

Source: *Own estimates. The model with the best fit is highlighted in bold.*

Table 6. Evaluations of forecasts for 3 months (h=3)

MODELO	RECM	EAM	EPAM	THEIL
AR (3)	0.0216	0.0027	0.0002	0.0505
MA (8)	0.0561	0.0066	0.0007	0.1265
ARIMA (3,3)	**0.0181**	**0.0023**	**0.0002**	**0.0419**
ARIMAX (2,1,1)	0.0292	0.0034	0.0004	0.0677
ARIMAX (1,1,1)	0.037	0.0045	0.0005	0.0867
ARDL (1,1,1)	0.02	0.0024	0.0003	0.0464
ARDL (1,1,2)	0.0227	0.0027	0.0027	0.053
ARDL (2,2,1)	0.0249	0.0031	0.0003	0.0576
ARDL (2,2,2)	0.026	0.0032	0.0003	0.0604
ARDL (3,3,1)	0.0197	0.0026	0.0002	0.0454
ARDL (3,3,2)	0.0201	0.0027	0.0003	0.0466

Source: *Own estimates. The model with the best fit is highlighted in bold.*

Table 7. Evaluations of forecasts for 6 months (h=6)

MODELO	RECM	EAM	EPAM	THEIL
AR (3)	0.0527	0.0094	0.001	0.1227
MA (8)	0.0734	0.0124	0.0125	0.1685
ARIMA (3,3)	0.0321	**0.0056**	**0.0006**	0.0745
ARIMAX (2,1,1)	0.0469	0.0078	0.0009	0.109
ARIMAX (1,1,1)	0.0478	0.0086	0.0009	0.1117
ARDL (1,1,1)	**0.0312**	0.0057	**0.0006**	**0.0724**
ARDL (1,1,2)	0.0339	0.0061	0.0007	0.0792
ARDL (2,2,1)	0.0351	0.0065	0.0007	0.0814
ARDL (2,2,2)	0.0359	0.0066	0.0007	0.0834
ARDL (3,3,1)	0.0329	0.0061	0.0007	0.0759
ARDL (3,3,2)	0.0331	0.0061	0.0007	0.0766

Source: *Own estimates. The model with the best fit is highlighted in bold.*

Table 8. Evaluations of forecasts for 12 months (h=12)

MODELO	RECM	EAM	EPAM	THEIL
AR (3)	0.1093	0.0254	0.0028	0.2565
MA (8)	0.1389	0.0329	0.0035	0.3254
ARIMA (3,3)	0.0564	0.0101	0.0011	0.1333
ARIMAX (2,1,1)	0.0726	0.0182	0.002	0.1696
ARDL (1,1,1)	**0.0344**	0.0083	0.0009	0.0799
ARDL (1,1,2)	0.0371	0.0088	0.0009	0.0866
ARDL (2,2,1)	0.038	0.0086	0.0009	0.0879
ARDL (2,2,2)	0.0391	0.0089	0.0009	0.0907
ARDL (3,3,1)	0.0339	**0.0073**	**0.0008**	**0.0784**
ARDL (3,3,2)	**0.0344**	0.0076	**0.0008**	0.0798

Source: *Own estimates. The model with the best fit is highlighted in bold.*

4. CONCLUSIONS

This paper explores and contrasts different econometric methodologies for forecasting Honduran tax revenues over various time horizons (1, 3, 6 and 12 months). As a spearhead, we use the methodology of cointegration in levels for uniecuational Dynamic models developed by Pesaran and Shin (1999) and Pesaran et al. (2001). The empirical model uses data from economic activity and energy consumption as an explanatory vector for the observed collection for a sample from 2007m1 to 2019m12. The exercise confirms the presence of a long-term relationship between these variables with an adjustment rate close to 70%, in line with a frequency of monthly data. Similarly, the model allows to derive the multipliers of the explanatory variables, thus verifying the presence of transient effects on the collection. Furthermore, the specified error correction model seems to suggest that variations in energy sales have a greater impact on the steady-state values of revenue compared to the impact of economic activity, however, more empirical evidence is needed to rigorously analyze this fact.

Once the "optimal" ARDL model has been revised, its forecasting capacity is contrasted with 10 different models, five of which are estimated using the Box-Jenkins methodology. Based on four assessment measures (RECM, EAM, EPAM and Tehil), it is concluded that the ARDL model (3,3,2) obtained through the cointegration methodology is the one that shows the best performance within the sample (*one step ahead forecast*). In fact, for the four time horizons evaluated, the different specifications of ARDL models seem to exceed the predictive capacity of the models estimated using the box-Jenkins methodology except for the one-quarter horizon, in which an ARIMA model (3,3) offers better projections. Finally, it is generally observed that none of the estimated time series methodologies seems to adequately capture the maturities of payments on account, which invites further exploration of other more complex methodologies or, at best, exploit the microsimulation tools for this purpose and complement the exercises offered by the time series models presented here.

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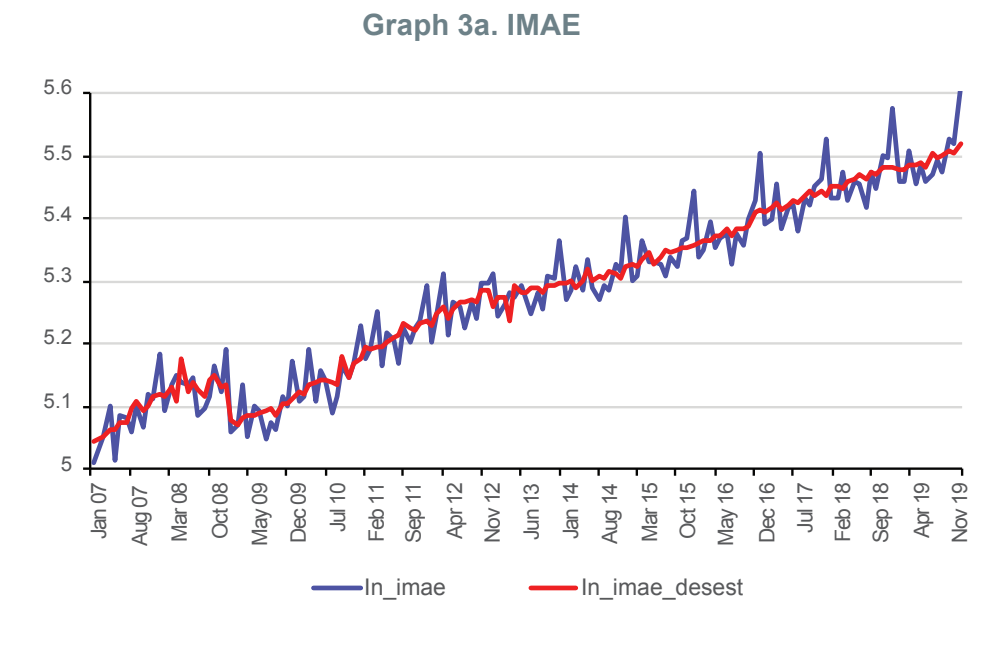
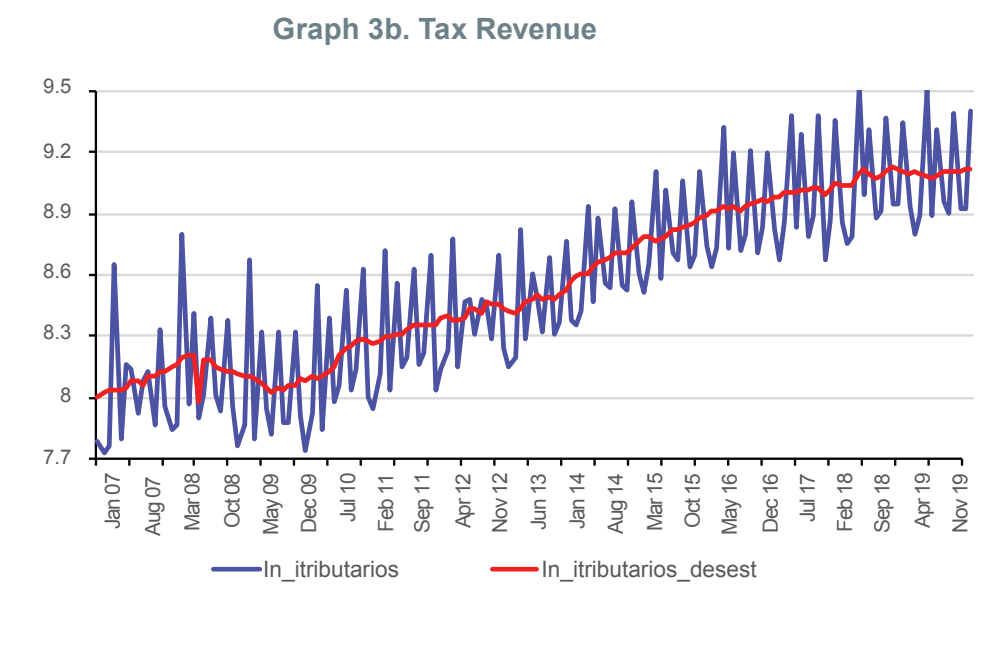
6. ANNEXES

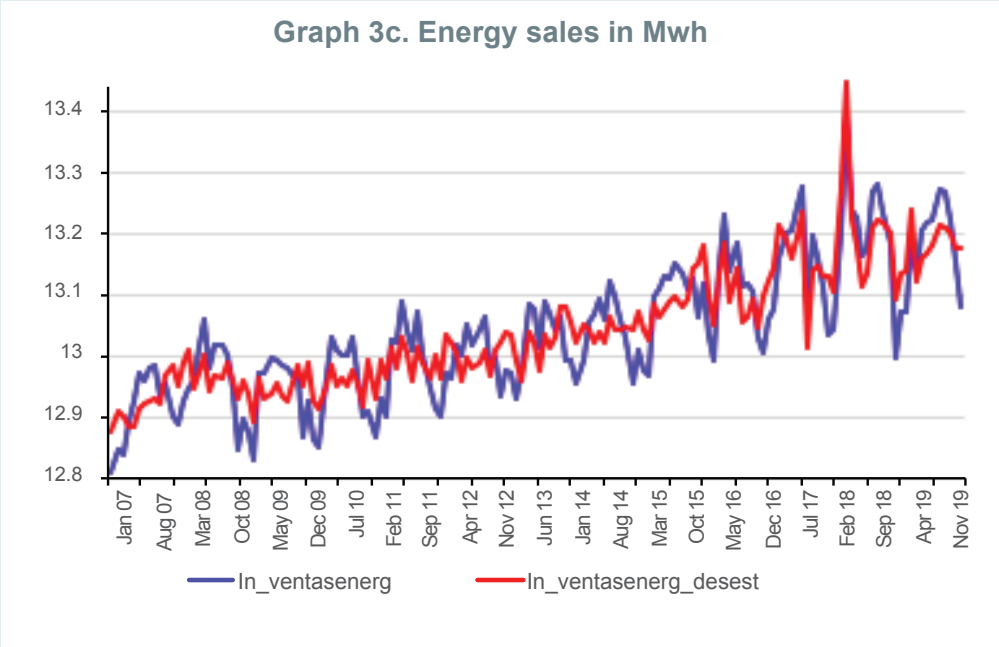
6.1 Description of the data

This section presents the graphical behavior of the three variables used for the estimates. In the blue line, the data are expressed in levels and in the red line, the data are de-seasonalized using the stretch-SEATS methodology developed by Gomez and Maravall (1996).

Graph 3. Data used 2007m1 - 2019m12 (in Logarithm)







Source: *own elaboration based on data from SAR, SIMAFIR and ENEE, respectively.*

6.2 Testing the error correction model

Table 9. Breusch-Godfrey autocorrelation test

LAGS (p)	STATISTIC F	DEGREEES OF FREEDOM	PROB > F
1	2.351	(1,134)	0.1275

Source: *Own estimates based on Equation 2.*

Table 10. Breusch-Pagan Heterocedasticity Test

X^2	1.19
Prob > X^2	0.2747

Source: *Own estimates based on Equation 2.*

Table 11. Test limits of Pesaran et al. (2001)

STATISTICAL	ESTIMATE	10%		5%		1%		VALUE *p*	
		I (*O*)	I (*I*)	I (*O*)	I (*I*)	I (*O*)	I (*I*)	I (*O*)	I (*I*)
F	12.259	3.129	4.147	3.773	4.890	5.213	6.521	0.000	0.000
t	-4.587	-2.531	-3.169	-2.840	-3.501	-3.440	-4.133	0.000	0.003

Source: *Own estimates based on Equation 2.*

6.3 Calculation of multipliers

Starting from Equation 3 and excluding the parameters c_0, c_1 and γ_i by simplicity, we have the following ARDL specification:

$$T_t = \hat{\phi}_1 T_{t-1} + \hat{\phi}_2 T_{t-2} + \hat{\phi}_3 T_{t-3} + \hat{\varphi}_0 en_t + \hat{\varphi}_1 en_{t-1} + \hat{\varphi}_2 en_{t-2} + \hat{\varphi}_3 en_{t-3} + \hat{\delta}_0 y_t + \hat{\delta}_1 y_{t-1} + \hat{\delta}_2 y_{t-2}$$

Multipliers are nothing more than the marginal effect of an exogenous variable on an explanatory variable and are defined as a series of partial sums, as follows:

$$\frac{\partial T_t}{\partial \mathbf{X'_t}} = \sum_{j=1}^{d,q} \beta_j$$

In this way, the multiplier effect of energy sales (en_t) on short-term revenue is constructed as:

$$\beta_{en,0} = \hat{\varphi}_0$$

$$\beta_{en,1} = \hat{\varphi}_1 + \hat{\phi}_1 \beta_{en,0}$$

$$\beta_{en,2} = \hat{\varphi}_2 + \hat{\phi}_2 \beta_{en,1}$$

$$\beta_{en,3} = \hat{\varphi}_3 + \hat{\phi}_3 \beta_{en,2}$$

$$\beta_{en,j} = \hat{\phi}_3 \beta_{en,j-1} \quad \text{con } j > 1$$

Similarly, the short-term multiplier effect of IMAE (y_t) on short-term collection is constructed as:

$$\beta_{y,0} = \hat{\delta}_0$$

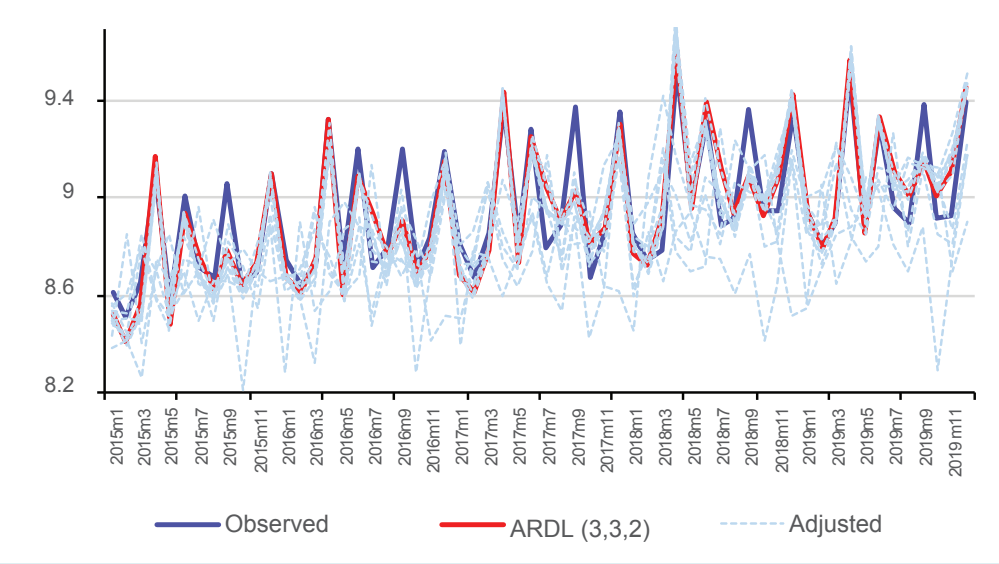
$$\beta_{y,1} = \hat{\delta}_1 + \hat{\phi}_1\beta_{y,0}$$

$$\beta_{y,2} = \hat{\delta}_2 + \hat{\phi}_2\beta_{y,1}$$

$$\beta_{y,j} = \hat{\phi}_3\beta_{y,j-1} \quad \text{con } j > 1$$

6.4 Adjustment of models within sample

Graph 4. Adjustment of models within sample (h=1)



Source: *Own estimates based on uniecuational models.*

TAXPAYERS' RIGHTS

within the framework of Mutual Assistance

Carmen **Botella García-Lastra**

SYNOPSIS

The objective of this paper is to examine the evolution of the automatic exchange of information in the light of doctrinal and case law decisions from the perspective of taxpayers' rights, highlighting their link with the principles derived from the protection of personal information. Only proportionality in the treatment of information can resolve the conflict between privacy and the need for information from Public Administrations. Likewise, the role of intermediaries appears as a decisive and conditioning factor in the fulfillment of tax obligations.

CONTENTS

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INTRODUCTION

The exchange of information has been implemented in different ways because in a globalized world in which current tax systems transcend the physical borders of States, a State, by itself, could not sustain its tax system. The phenomenon of globalization has deteriorated fiscal sovereignty, making cooperation between States essential. Hence, the exchange of information on request has evolved to the automatic information exchange.

To compensate for this imbalance in the demand for data, the levels of protection and guarantees granted to taxpayers must be reinforced.

In accordance with these premises, we will examine the evolution of the exchange of information in the following sections:

FIRST: The exchange of tax information in the OECD.

SECOND: The exchange of information in the European Union.

THIRD: Mutual Assistance under the General Tax Law.

FOURTH: The administrative entity in charge of the management and administration of Mutual Assistance in Spain.

FIFTH: Rights and guarantees of taxpayers.

SIXTH: Exchange of information and rights of taxpayers.

SEVENTH: The European Data Protection Regulation and the repeal of Directive 95/46 EEC.

EIGHTH: Consequences of automatic and multilateral exchange in a digital context.

NINTH: Disclosure of the list of tax offenders from the perspective of data protection.

TENTH: The figure of the intermediary and the protection of the rights of taxpayers.

ELEVENTH: The Influence of European Union Law as a decisive factor.

1. EVOLUTION OF INFORMATION EXCHANGE

FIRST: The exchange of tax information in the OECD

The exchange of tax information is not a new concept but has been present in bilateral and multilateral agreements between States.

The situation began to change when London's 2009 G20 corroborated the opacity of tax havens and income concealment, so a global campaign was launched to eradicate banking secrecy and force opacity-ridden jurisdictions to cooperate.

This change was launched in 2010 with the FATCA (Foreing Account Tax Compliance Act) law on tax compliance for foreign accounts, by virtue of which all information becomes relevant. In this way, from the information on request, we go to the automatic exchange of information on financial entities and financial capital income. For this reason, demand-based and automatic information become equivalent. The instrument is the automatic exchange of information on financial assets to the tax administrations in charge of financial intermediaries that, in addition, are forced to observe due diligence.

Even though FATCA has accelerated the development of a common scheme that allows a more efficient exchange of tax information, it involves the unilateral imposition of a collaboration system by a State, requiring greater progress and a culture of cooperation in tax matters since three different automatic information exchange systems coexist, OECD, EU and FATCA. (Sánchez, 2016, p.4).

SECOND: The exchange of information in the EU

The European Union, in which several Member States, including Spain, had already signed the FATCA agreement, could not be left out of such far-reaching changes, although it was necessary to establish a common framework for the EU in its entirety. Therefore, a process of standardization of these information exchanges was carried out.

Thus, Directive 2011/16/EU on administrative cooperation in the field of taxation, repealing Directive 77/799/EEC, provided an push for the exchange of information as a mechanism to combat fraud in the new economic context since it standardized exchanges through consistent forms. It also allowed the request for information to be processed even when internal remedies have not been exhausted. Likewise, the OECD standard on the exchange of information based on prior requirement was adapted so that the principle of subsidiarity be respected, and the information requested be of tax relevance for the Requesting State.

The limits on information exchange also include the rules of Member States, so the Requested State may refuse to provide information on legal grounds, although domestic rules can no longer take refuge in bank secrecy as derived from Article 18.2 of the Directive.

However, this provision affects only the previous requirements and not the automatic requirements under which information can be accessed without having to request it from competent authorities.

In this context, reference must be made of the Rubik agreements, which are bilateral agreements between Switzerland and other signatory states. Within the EU, these agreements were signed by Austria and the United Kingdom and entered into force in January 2013.

The essence of these agreements consisted of substituting the exchange of information for the payment of a single, proportional and liberating tax rate, followed by a withholding on capital income generated by the assets deposited in Swiss accounts at the fixed rate set in each country. Payments are made by the Paying Agents who must transfer the amounts withheld to the Tax Agencies of the other signatory State.

Their uniqueness lies in the fact that the signatory states, Austria and the United Kingdom, are unaware of the veracity of the amounts transferred to the extent that they cannot be verified and it cannot be certified that they have been made correctly either. These agreements do not seem consistent with the transparency that such exchanges are intended to obtain, although from the perspective of protecting the rights of taxpayers, some authors consider them adequate to the extent that they would not violate economic privacy.

With regard to Spain, although it was initially interested in the functioning of the Rubik agreements, it followed its own route on the path of information transparency. So, the first additional provision of Royal Decree Law 12/2012, of April 12, the special tax return was approved. This provision enabled taxpayers of the IRPF [personal income tax], the IS and those filing income tax of non-residents holding assets and entitlements that do not correspond to the income declared in said taxes, to file the tax return provided for in said provision in order to normalize their tax situation. This, if they had been owners of such assets and entitlements prior to the end of the last tax period, whose tax filing period had ended before the entry into force of this provision.

In this way, taxpayers who availed themselves of the aforementioned provision were up to date on the existence of their current accounts and their balances with a view to the automatic exchange of information that would take place for the first time in various countries in the year 2012.

However, as the Constitutional Court warned, neither the experiences of other countries nor the recommendations of the OECD can lead this provision becoming constitutional. Likewise, the Court warned that the firm legal-tax situations produced under its protection are not subject to review as a consequence of the nullity of said provision, due to the requirement of the principle of legal certainty of Article 9.3, citing in particular STC 189/2005, FJ 9.

The Mutual Assistance framework has, however, transcended the scope of the European Union and has extended to a set of States and Jurisdictions that, in accordance with the provisions of the BEPS Plan, have agreed to provide periodically to other States a set of data and information of enormous economic relevance. Mutual assistance goes beyond the scope of the EU and extends to a much broader context.

The Multilateral Agreement between Competent Authorities on the automatic exchange of financial account information, reached in Berlin on October 29, 2014 and the Multilateral Agreement for the implementation of certain conventional measures against the erosion of taxable bases and the transfer of benefits that is part of action 15 of the BEPS Plan have modified the essence of the traditional agreements that have become instruments for obtaining information impossible to imagine not long ago, so much so that we wonder if these circumstances have given rise to a new concept of the international taxation.

From information on request we have gone to automatic information.

THIRD: Mutual Assistance under the General Tax Law

This transformation of the exchange of information has required its inclusion in the General Tax Law, which was carried out by Royal Decree Law 20/2011 of December 30, which defined the concept of Mutual Assistance that, until then, was only present in Community Directives.

In article 1 of the General Tax Law, a new section two was introduced which states as follows:

"For the purposes of this law, mutual assistance shall be construed as the set of assistance, collaboration, cooperation and other actions of a similar nature that the Spanish State provides, receives or conducts with the European Union and other international or supranational entities, and with other States by virtue of the regulations on mutual assistance among the Member States of the European Union or in the framework of the conventions to avoid double taxation or other international conventions. Mutual assistance may include the performance of actions involving taxpayers.

The mutual assistance referred to in this section involves the legal nature of international relations referred to in Article 149.1.3 of the Constitution".

In addition, Article 83.1, in its second paragraph, considers mutual assistance actions as actions for the application of taxes, so the procedures established therein, and its development regulations are applicable to them.

In this way, according to STC No. 76/1990, of April 26, "The duty to communicate information with tax relevance becomes, then, a necessary instrument not only for a fair contribution to general expenses (Article 31 of the Constitution) but also for effective tax management".

The only exceptions to the exercise of this power are those included in the aforementioned Article 93 of the General Tax Law:

a) The secrecy of the content of the correspondence.

b) The secrecy of the data that have been communicated to the Administration for an exclusively statistical purpose.

c) The secrecy of the notarial protocol in the terms provided in section 4, c).

d) Non-equity private information that professionals may learn by reason of the exercise of their activity that violate the honor or family privacy or confidential client information they may know of by virtue of the provision of professional advisory or defense services.

Professionals may not invoke professional secrecy to prevent the verification of their own tax situation.

FOURTH: The administrative entity in charge of the management and administration of Mutual Assistance in Spain

The AEAT should be considered a competent authority for the purposes of international mutual assistance. The central liaison office is the ONIF Central Information Team. These duties include information exchange actions, simultaneous controls, and assistance in notification.

The National Office of International Taxation is assigned the duties of coordinating simultaneous controls and its involvement in them, as well as the establishment of criteria and guidelines for action in international forums or meetings when dealing with, among other issues, international mutual assistance matters.

FIFTH: Rights and guarantees of taxpayers

The concern to find common criteria for the protection of taxpayers that offset the obligations arising from automatic information exchanges has led various international organizations to establish codes or charters of taxpayer rights and guarantees.

Law 1/1998 of February 6, on Taxpayers' Rights and Guarantees, was a pioneer by decisively addressing, in its first chapter, the establishment of general principles and the basic rights and guarantees of taxpayers in their relations with the Tax Administrations applicable to all of them and without excluding another series of rights recognized in the rest of the legal system. Similarly, it established, in its second chapter, the information and assistance duties incumbent on the Tax Administrations for taxpayers to comply with their obligations.

Current tax systems transcend the physical borders of States so that a State, by itself, could not sustain its tax system. The phenomenon of globalization has deteriorated fiscal sovereignty, making cooperation among States essential. Hence, we have gone from on-request information exchange to automatic information exchange.

To compensate for this imbalance in the demand for information, higher levels of protection and guarantees must be granted to taxpayers.

Hence, the rights and guarantees of taxpayers in this scenario must be reinforced or, at least, put into action.

Therefore, a set of Bill of Rights acquires more and more relevance, of which we highlight the following:

- **Charter of Fundamental Rights of the European Union (2000/C 364/01 drafted in Nice, December 7, 2000**

Article 7 of the Charter recognizes that everyone has the right to respect for their private and family life, their home, and their communications.

Likewise, in accordance with the provisions of Article 8 of the aforementioned Charter, everyone has the right to the protection of personal information that concerns them. This information will be treated fairly for specific purposes and based on the consent of the person concerned or by virtue of another legitimate basis provided by law.

Everyone has the right to access the information that concern them and to rectify it.

- **European Convention on Human Rights,** adopted by the Council of Europe in 1950 and which entered into force in 1953.

- **Taxpayer Bill of Rights for ILADT member countries.**

On the occasion of the ILADT Congress held in Santiago de Compostela in 2012, a Commission was appointed to prepare a draft for a Taxpayer's Bill of Rights that was expanded with new incorporations in Mexico in 2015 and in Bolivia in 2016, and made it possible to formulate the proposal of the Taxpayer's Bill of Rights, considering that, since many of the rights included in it are based on International Treaties for the Protection of Human Rights, the possibility of invoking such Treaties is included in said document.

This Charter recognizes up to 142 rights, an important part which are related to mutual assistance.

European Taxpayer Code

The document called "Guidelines for a Model of a European Taxpayer Code" prepared by the European Commission, General Directorate for Taxation and Customs Union of 2016, establishes a set of principles that compile the main rights and obligations that govern the relationships between taxpayers and the tax administrations in Europe.

SIXTH: Exchange of information and rights of taxpayers

The automatic exchange of information has become the key word because information is seen as the panacea to remedy the inability of tax administrations to correct tax fraud, without having to take into account the criteria of proportionality and the guarantees of the taxpayers.

At the same time, the disclosure of aggressive tax planning schemes (disclosure) and the prevention of money laundering to prevent the use of the financial system and other sectors of economic activity, have generated their own mechanisms for obtaining information and international coordination.

In this way, the tax significance of the information obtained, given its generalization, is no longer relevant, since it is obtained routinely.

In this context, the regulation of the automatic exchanges of information, as it is based on International Conventions, Multilateral Convention, and International Conventions, means that the procedure, unless it incurs serious deficiencies, cannot be objected.

For this reason, there has been a radical change in the EU by including Article 8 of the EU Charter of Fundamental Rights in the framework of the Consolidated Treaty of October 26, 2012 (2012/C 326/02 and repealing the Directive 95/46 with the publication and approval of the General Data Protection Regulation (EU) 2016/679 that we will comment on later.

In relation to this issue, we must take into account the Ruling of the EU Court of Justice of April 8, 2014, Digital Rights case, joined cases C-293/2012 and C-594/2012.

They address the questions raised by two courts, the Irish and the Austrian Courts, regarding the validity of Directive 2006/24/EC of March 15, 2006 on the preservation of information generated or processed in relation to the provision of publicly accessible electronic communications services or public communications networks for violating Articles 7 and 8 of the EU Charter of Fundamental Rights.

The ruling of the CJEU of April 8, 2014, cases C-293/12 and C-594/12, Digital Rights Ireland LTD is of undoubted interest as some of the conclusions analyzed there raised doubts about the full compliance of Directive 2011/16/EU with the fundamental right to the protection of personal information. This led the European Data Protection Supervisor to urge the Community lawmakers to define more precisely the ends and the context in which personal information can be transmitted, ensuring that the principles of necessity and proportionality are respected in all types of information exchange. (Moreno, 2016, p.12).

In this regard, the importance of the proportionality test must be highlighted as a constitutive requirement of any limitation of fundamental rights. Even though the measure was necessary, according to the aforementioned ruling, the period of retention of customer information was disproportionate to the importance and usefulness of the same.

In this sense, the CJEU recalls that although the limitations of fundamental rights respond to a general interest objective such as contributing to the fight against serious crime to guarantee legal certainty, the interference found does not pass the proportionality test, as it exceeds the limits of what is strictly necessary. It is necessary to establish clear and precise rules that establish minimum requirements, so that the people whose information has been kept have sufficient guarantees that allow their personal information to be protected effectively against the risks of abuse and against any illicit access or use of such information.

Recently, a Grand Chamber Ruling of the CJEU has been issued, dated October 2, 2018, case C-207/16, which states that access by Public Authorities to personal information to investigate a robbery represents an interference with the rights contained in Articles 7 and 8 of the EU Bill of Rights, in such a way that only the objective of the fight against serious crime justifies access to personal information from which precise conclusions can be drawn about the lives of people whose private information has been preserved.

Regarding the rights of taxpayers in the exchange of information, reference must be made to both the on-request information exchange and the automatic information exchange.

Regarding the on-request information exchange, in the European context, the ruling of the Court of Justice of the European Union, on the Sabou case, C-276/2012, differentiated between the investigation stage and the fiscal control litigation stage of fiscal control in a procedure. The Court considered that the defense rights of taxpayers do not require that the taxpayer be part of the request for information sent by the requested Member State to the State requesting the information. Nor is it necessary for the taxpayer to be heard when the questions are asked in the requested Member State or before it sends the information to the State that requested it.

This does not preclude the filing of such guarantees in the corresponding national law.

For its part, in the Berlioz case, CJEU of May 16, 2017, case C-628/15, the CJEU applied the principles derived from the EU Charter of Fundamental Rights to cases in which the taxpayer considers that it involves allegedly improper information due to its relationship with the taxpayer audited, although the scope of control was very delimited by the CJEU, with the courts of a Member State being able to control the legality of the request for information only in relation to its "foreseeable relevance."

In the aforementioned matter, the French tax administration requested from the Luxembourg tax administration certain information on the dividends paid by a French subsidiary of the entity Berlioz Investments Funds, resident in Luxembourg, since such dividends were exempt from withholding on account in France. The taxpayer did not provide all the required information because it was not considered relevant, for which a penalty was imposed that was challenged, invoking the right to effective judicial protection.

The scope of this right to effective judicial protection should allow the taxpayer not only to review the penalty for non-compliance, but also the validity and legality of the information request that has driven it.

In light of Article 47 of the EU Charter of Fundamental Rights, the right to effective judicial protection protects the review of the legality of the request for tax information between States, without prejudice to the fact that access to the request for information and to the complete case file to be heard and to support its position more clearly is affected by the matter in the Sabou case and is a disputed issue.

The importance of this ruling lies in the fact that for the first occasion it is recognized by case law that the right to effective judicial protection must allow questioning the validity and legality of a request for tax information from another Member State. Giner (2016) p.10

In short, the CJEU recognizes the right to effective judicial protection within the framework of the exchange of information on request.

Furthermore, the invocation of the EU Charter of Fundamental Rights is gaining more and more prominence, with more than three hundred decisions having been handed down, which are based on the aforementioned Charter.

Regarding automatic information exchange, it should be noted that in addition to introducing the concept of Mutual Assistance in Article 1 of the General Tax Law, Law 34/2015, of September 21, introduced the Twenty-second Additional Provision, on obligations of information and due diligence related to financial accounts in the field of Mutual Assistance.

With this regulatory amendment, the Directive 2014/107/EU was transposed regarding the mandatory automatic exchange of information in the field of taxation and, at the same time, the provisions of the Multilateral Agreement on Competent Authorities on the automatic exchange of financial account information in order to launch such exchanges as of January 1, 2016.

Likewise, Royal Decree 1021/2015, of November 13, established the obligation to identify the tax residence of the people who hold the ownership or control of certain financial accounts and to inform about them in the field of Mutual Assistance.

In accordance with the provisions of the aforementioned Royal Decree, the financial institutions will be obliged to present an informative return, which will be annual, when the persons who hold ownership or control of the financial accounts reside in a Member State of the European Union or any territory to which said directive applies. Financial institutions will also be obliged to present an informative return in other countries or jurisdictions where the Multilateral Agreement between competent Authorities on automatic information exchange on financial accounts has taken effect, with which there is reciprocity in the information exchange or Spain has entered into an agreement by virtue of which the Country or Jurisdiction must provide that information and there is reciprocity in the information exchange.

The importance of these exchanges has been increasing because, if at first there were 50 States or jurisdictions

that initially signed such agreements, currently, the number of States that have signed such agreements amounts to 102.

In automatic information exchanges, the taxpayer does not have the possibility of filing any claim, since with due diligence procedures he has been previously advised of the information that his country of residence will be reporting.

SEVENTH: The European Data Protection Regulation and the repeal of Directive 95/46 EEC

The new European Regulation 2016/679 of April 27, on Information Protection, whose entry into force took place on May 25, 2018 establishes that:

- The protection of individuals in relation to the processing of personal information is a fundamental right. Article 8, Section 1 of the Charter of Fundamental Rights of the European Union ("the Charter") and Article 16, Section 1 of the Treaty on the Functioning of the European Union (TFEU) state that everyone has the right to the protection of their personal information.

- The principles and regulations relating to the protection of individuals regarding the processing of their personal information must, whatever their nationality or residence, respect their freedoms and fundamental rights, in particular the right to protection of personal information.

- The processing of personal information must be designed to serve humanity. The right to the protection of personal information is not an absolute right but must be considered in relation to its role in society and balance with other fundamental rights.

The new Information Protection Regulation respects fundamental rights and observes the freedoms and principles recognized in the Charter as enshrined in the Treaties, in particular respect for private and family life, home and communications, the protection of personal information, freedom of thought, conscience and religion, freedom of expression and information, freedom of enterprise, the right to effective judicial protection and a fair trial, and cultural, religious and linguistic diversity.

Although the objectives and principles of Directive 95/46/EC remain valid, this has not prevented information protection in the Union from being applied in a fragmented manner. Differences in the level of protection of the rights and freedoms of individuals, in particular the right to protection of personal information, with regard to the processing of such information in the Member States may impede the free movement of personal information within the Union.

These differences may therefore constitute an obstacle to the pursuit of economic activities at European Union level, distort competition and prevent the authorities from fulfilling their functions under Union law. This difference in the levels of protection is due to the existence of differences in the execution and application of Directive 95/46.

In order to ensure a uniform and high level of protection for individuals and to eliminate obstacles to the movement of personal information within the European Union, the level of protection of the rights and freedoms of individuals regarding the processing of such information must be equivalent in all Member States.

Therefore, a very positive advance to achieve a more consistent way of protecting all European citizens has been the transition from Directive 95/46/EC to the General EU Regulation (2016) on Information Protection, which, as of 2018, has direct effect within

the EU so European citizens and residents will have the same degree of protection with respect to their information. Serrat, M (2018) pp. 355 and 356.

The aforementioned Regulation establishes the rules relating to the protection of individuals with regard to the processing of personal information and the rules relating to the free movement of such information and protects the fundamental rights and freedoms of individuals and, in particular, their right to the protection of personal information.

The free movement of personal information within the European Union may not be restricted or prohibited for reasons related to the protection of individuals as regards the handling of such personal information.

It should be noted that an important innovation presented by Regulation (EU) 2016/679 is the evolution of a model based, fundamentally, on the control of compliance to another that rests on the principle of active responsibility, which requires prior assessment by the person in charge or by the person responsible for the handling of the risk that the processing of personal information could generate in order to adopt the appropriate measures, based on said assessment.

In Spain, the introduction of the aforementioned Regulation led to the **approval of Organic Law 3/2018 of December 5, on the Protection of Personal Information and the guarantee of digital rights, which has a twofold** objective:

- Adapt the Spanish legal system to Regulation (EU) 2016/679 of the European Parliament and the Council, of April 27, 2016, General Regulation on Information Protection and complete its provisions.

- Establish that the fundamental right of individuals to the protection of personal information, protected by Article 18.4 of the Constitution, will be exercised in accordance with the provisions of Regulation (EU) 2016/679 and the new organic law.

This law recognizes that the autonomous communities have powers of normative development and execution of the fundamental right to the protection of personal information in their field of activity and the autonomous information protection authorities that are established are responsible for guaranteeing this fundamental right of citizens.

Second, it is also the purpose of this law to guarantee the digital rights of citizens, under the provisions of Article 18.4 of the Constitution.

However, it must be considered that since the Autonomous Communities do not have powers in matters of Mutual Assistance, they cannot carry out information protection actions that exceed their territorial scope.

The General Information Protection Regulation aims with its direct effectiveness to overcome the obstacles that impeded the harmonizing purpose of Directive 95/46/EC of the European Parliament and of the Council, of October 24, 1995, on the protection of individuals regarding the processing of personal information and the free movement of such data.

Likewise, new circumstances are addressed, mainly the increase in cross-border flows of personal information as a result of the operation of the domestic market, the challenges posed by rapid technological evolution and globalization, which has made personal information the fundamental resource of the society of information. The importance of personal information has positive aspects, because it allows new and better services, products, or scientific findings. But it also has risks, since information about individuals multiplies exponentially, is more accessible by more actors and, each time, is easier to process, while controlling its destination and use grows more difficult.

We must also highlight that, together with the fundamental right to the protection of personal information, the aforementioned law recognizes in its title X, at the same level, the so-called digital rights referred to in Article 18.4 of the Spanish Constitution. In particular, the rights and freedoms applicable to the Internet environment are subject to regulation, such as Internet neutrality and universal access or the rights to security and digital education, as well as the rights to privacy, portability, and digital will. The recognition of the right to digital disconnection within the framework of the right to privacy in the use of digital devices at the workplace and the protection of minors on the Internet occupies a relevant place. Finally, the guarantee of freedom of expression and the right to clarify information in digital media is noteworthy.

However, in accordance with the fourteenth additional provision, the tax administrations responsible for data files with tax significance referred to in Article 95 of Law 58/2003, of December 17, General Tax, may, in relation to said information, deny the exercise of the rights referred to in Articles 15 to 22 of Regulation (EU) 2016/679, when it obstructs the administrative actions aimed at ensuring compliance with tax obligations and, in any case, when the affected is being subject to inspection actions.

EIGHTH: Consequences of automatic and multilateral exchange in a digital context

The ease with which communication takes place in an increasingly digitized context has opened the door to hacking and information leaks. Unauthorized disclosure in the form of information leaks has become a bigger problem than piracy itself. The difference between one and the other is that the leaks are produced by personnel with access to the information while the security breaches come from external agents who access the information from outside with the intention of stealing it.

The more information there is, the more value it has; hence the growing risk that the information stored on the servers of the tax administrations may be leaked to the media or other interested parties.

The leak occurs when the information is revealed to the media that, in turn, make such information public.

Privacy is a matter of trust in the person responsible for keeping information private. There is an increasing contradiction between the demand for more information and privacy, while all kinds of private data are disseminated on social media and in the media without major problems and the interested party can only confirm whether the data is true or not. The affected party may thus not question the fact that information has been disclosed, since he/she must be responsible for its custody.

Information has grown exponentially, and it is a challenge for public administrations to maintain the confidence of their taxpayers that there will be no information leaks.

Who is liable for damages caused by information leaks?

The trend is therefore directed towards a compliance system between the Administration, taxpayers and intermediaries that is based on mutual trust in minimizing fiscal risks.

In this context, only proportionality in the treatment of information can resolve the conflict between privacy and the need for information of Public Administrations.

NINTH: Disclosure of the list of tax offenders from the perspective of data protection

Even though there are countries that encourage compliant taxpayers through various mechanisms, others accentuate the public rejection of non-compliant taxpayers using the massive and automated treatment

of information as a control mechanism in the fight against fraud by creating official registries of non-compliant taxpayers and publicly disclosing their identities together with the penalties imposed. This is designed to ensure the collection of tax debts before taxpayers are exposed to public opinion. Olivares (2017) p.20

Article 95 bis of the General Tax Law introduced by Law 34/2015, of September 21, enables the Administration to periodically publish lists of Public Treasury debtors when the amount of debts and tax penalties pending payment exceeds the amount of €1,000,000 and said debts or penalties had not been paid after the term of the voluntary period.

In this way, lists of such delinquent taxpayers are published that include their name and TIN, whether they are individuals or corporations and the amount of the debts and penalties that prompt their publication. The publication covers state-level taxes, including taxes that make up the customs debt.

On the other hand, we must take into account the provisions of Organic Law 10/2015, of September 10, which regulates the access and publicity of certain information contained in the decisions issued on tax fraud and whose preamble states: "In the specific case of crimes related to tax fraud, in the face of the convicted person's interest, the public interest should prevail. It must be considered that the legal asset protected in these cases has been elevated to constitutional rank in article 31 of the Spanish Constitution".

In this regard, it can be noted that tax actions and legal actions are governed by different principles. The former are governed by confidentiality, except for the exceptions determined by law; the latter are governed by legal considerations, disclosure, except for the exceptions provided in the Organic Law of the Judicial Branch. So, unlike what happens in the tax area, the regulation of access to the information contained in the decisions must be done by organic law.

However, despite these statements and, in response to the recommendations made by the Judicial Branch General Council, an exception was introduced to the disclosure of access in cases in which all of the claims have been paid prior to the final decision, namely the amount corresponding to the damage caused to the Public Treasury for all concepts.

Finally, regarding the periodic publication of comprehensive lists of Public Treasury debtors, we must mention the Draft Bill on Fraud Prevention whose hearing process was carried out in 2019. The text of the Draft Bill includes "those who have the status of tax debtors having been declared jointly and severally liable".

Article 11 of the aforementioned Draft Bill maintains, in Section 4 of Article 95 bis of the General Tax Law, the provision that "the publication will be made by electronic means, and the necessary measures must be adopted to prevent the indexing of its content through Internet search engines and the listings will no longer be accessible after three months from the date of publication," all linked to the right to privacy in Internet searches.

TENTH: The figure of the intermediary and the protection of the rights of taxpayers

The role of intermediaries, as regards the design of aggressive tax planning mechanisms, has been given particular attention by the OECD and the EU who have seen the importance of this activity, both in the design of aggressive tax planning mechanisms and in terms of their privileged position to reduce or avoid the use of such mechanisms, so their role appears as a conditioning and decisive factor in the fulfilment of tax obligations.

In this regard, Directive 2018/822, of May 25, 2018, amended Directive 2011/16/EU with regard to the automatic and mandatory exchange of information

in the field of taxation in relation to cross-border mechanisms subject to communication of information, whose transposition should have been carried out before December 31, 2019. This has not been possible in Spain due to government's inability to meet the scheduled dates.

However, the approval of the measures derived from the aforementioned Directive will be launched in Spain shortly, as the legal and regulatory modifications have already been publicly disclosed.

In the subjective sphere, the transposition of the Directive into Spanish regulations will extend the recognition of the obligation of professional secrecy to all those who were considered intermediaries in accordance with the aforementioned Directive. This is important since in the initial Draft Bill, the duty of professional secrecy was limited to lawyers.

For these purposes, Article 93.5 of the LGT, after recognizing in the previous section the secrecy of the content of correspondence, of the data that have been supplied for an exclusively statistical function and of the notarial protocol with the exceptions provided therein, establishes in the fifth section that the obligation of other professionals not mentioned in the previous sections to provide information with tax significance will not cover private non-equity information that they learn by virtue of the exercise of their activity whose disclosure may threaten the integrity or personal and family privacy. It will not cover either those confidential data of their clients, which they may have obtained because of the provision of professional assistance or defense services.

In this sense, both the Constitutional Court, STC 110/1984, and the STS of October 30, 1996, had already recognized the limits of this request for information insofar as the Inspection will be able to know the identity of the client and the generic concept of the professional service provided, but not the legal issue on which advice or opinion is sought.

In this context, the possible application of professional secrecy to company lawyers has been raised, which does not seem to fit into the aforementioned precept although, in the opinion of the doctrine, it could be based on the right not to incriminate oneself and that protects against extraction by coercive means of self-incriminating statements.

From this point of view, according to some authors, the right not to incriminate oneself, "nemo tenetur", could be used to reject requirements directed at lawyers and company employees, as long as it can invoke their relationship with the corporation for which they work. It should be noted, however, that this right does not imply an obligation for the employee not to testify against his company.

ELEVENTH: The Influence of European Union Law as a decisive factor

In view of various decisions of the EU Court of Justice in which the principle of primacy of European Union law is questioned in relation to the rules of internal law regulating the statute of limitation, taking into account the Ruling of September 8, 2015 of the CJEU, it can be concluded that if the national judge considers the application of the national provisions on the interruption of the statute of limitation and these lead to impunity, it could be declared that the measures established to combat fraud and the illicit activities affecting the financial interests of the EU are neither effective nor dissuasive, which would be incompatible with Article 325 of the TFEU. Lafuente (2019) p.95.

On the other hand, in the Decision of the Supreme Court (SC) of October 10, 2019 and as regards an audit carried out by the Tax Administration, in order to obtain information on expenses, jobs and investments carried out by a company to materialize allocations to the mining depletion allowance through access to the company's management system, the SC considered such action

disproportionate and contrary to the legal system to the extent that it violates the right to inviolability of the domicile and contravenes, among others, the European Convention on Human Rights.

In this regard, the Supreme Court invokes the body of doctrine forged around the criteria repeatedly expressed by the Constitutional Court, the European Court of Human Rights and the Supreme Court itself on the scope of the powers of the judge to authorize the entry of the Administration, as well as on the requirements that said petition must meet in order for the limitation of such a relevant fundamental right to be considered constitutionally legitimate.

As we can see, decisions on very different issues have been resolved with the same arguments, proportionality, procedural guarantees and respect for the general rights of taxpayers, which reveals a similar understanding of very disparate issues when what is breached are procedural guarantees and the proportionality of the actions carried out by the Public Administrations.

2. CONCLUSIONS

In view of the above, we can formulate a series of assessments regarding the evolution of the rights of taxpayers in the exchange of information in the following manner:

First: Automatic financial account exchanges have made it possible to capture a high volume of information through financial intermediaries, which includes automatic information on various financial assets.

In the CRS exchange, financial information refers to the following types of financial assets:

- Deposit accounts
- Custody accounts
- Participations in Investment Funds
- Participations in foreign funds in the financial institution
- Cash value insurance contracts and certain annuity contracts offered by a financial institution

Information on the volume of taxpayers and the amounts that these exchanges represent has not been found in the AEAT databases. It does contain information on exchanges made spontaneously and those made on request.

Although the automatic exchanges of information, as stated in the AEAT Strategic Plan we will be addressing, have increased considerably due to the greater number of countries and jurisdictions that have joined, up to a total of 102, in light of the evolution that has taken place in recent years with the appearance of virtual currencies and new financial products that may not be included in automatic exchanges, it is possible to hypothesize whether the volume of automatic financial information exchanges could lose part of its relevance over time.

In this context, the Intermediaries Directive and the Compliance Policies acquire a new dimension, appearing as new standards of behavior that, if generalized, would not make automatic information exchanges so necessary.

Second: With the repeal of Directive 95/46 and the application of the Information Protection Regulation as of 2018, the rights of taxpayers in the field of information exchange focus on the protection of their personal information in accordance with the general principles on the matter.

Hence, the rights of taxpayers in this area converge with the general rights of individuals, so their scope goes beyond the specific area of information exchange.

The postulates of the Schrems Decision in Case C-362/14 can serve as guidance in this regard, since the Court of Justice establishes that a regulation that allows public authorities to have general access to the content of electronic communications undermines the essential content of the fundamental right to respect for privacy.

In addition, the Court of Justice emphasizes that a regulation that does not foresee any possibility for the defendant to exercise legal actions to access the personal information that concern him or to obtain its rectification or deletion undermines the essential content of the fundamental right to effective judicial protection, when that possibility is inherent to the existence of the rule of law.

Thus, respect for personal information entails limitations on information exchanges in so far as the Courts find that the rights contained in the EU Charter of Fundamental Rights have been infringed.

Third: Public Administrations are required to have a common standard in the protection of the rights

of taxpayers whose data are subject to automatic exchange based on the conventions for the protection of human rights.

The EU is more demanding in terms of this standard when applying Article 8 of the EU Convention on Fundamental Rights of October 26, 2012, (/C 326/02) according to the consolidated version of the EU Treaty and the regulation of the European Information Protection Regulation 2016/679 of the European Parliament and of the Council on the protection of personal information.

Fourth: Tax Administrations must, increasingly, promote cooperative compliance and thus, the AEAT Strategic Plan for the years 2020 to 2023, published on January 28, 2020, states as follows:

"At the international level, the increase in information transparency and the consolidation of all exchanges of information promoted in the European Union and in the OECD should be noted. All this information has been completed, in recent years, with other very relevant sources, such as information on financial accounts obtained by the application of the Agreement between the Kingdom of Spain and the United States of America for the improvement of international tax compliance with the implementation of the Foreign Account Tax Compliance Act-FATCA (Foreign Account Tax Compliance Act), of the Multilateral Agreement between Competent Authorities on automatic exchange of financial account information, concluded in Berlin on October 29, 2014 (CRS) or, within the European Union, exchanges under the Council Directive 2014/107/EU, of December 9, 2014 (known as DAC 2), which modifies Council Directive 2011/16/EU, of 15 February 2011, on administrative cooperation in the field of direct taxation.

In particular, the automatic exchange of information on financial accounts abroad owned by residents in Spain has increased significantly in recent years, to the extent that as of 2018 a very relevant number of jurisdictions have joined the CRS project (Common Reporting Standard), developed by the OECD and promoted by the Global Forum for Transparency and Information Exchange. As of September 30, 2017, Spain made the first information exchange, affecting 49 jurisdictions. In 2018, these information exchanges were extended to 100 jurisdictions, and with respect to 2019, these exchanges have already affected 102 jurisdictions, in accordance with the international commitments assumed for the implementation of the CRS.

The generalization of automatic information exchanges at the international level requires the Tax Agency to implement computerized tools for purging information received from abroad so that it can be used in prevention actions and, where appropriate, control of tax compliance. During 2020, the OECD Global Forum on Transparency and Exchange of Information for Tax Purposes will evaluate Spain, along with the rest of the countries and jurisdictions participating in the automatic exchange of financial account information, in relation to the observance of obligations derived from the CRS. The performance of due diligence obligations Financial Institutions must follow to identify the tax residence of persons holding the ownership or control of certain financial accounts shall be analyzed. This will ensure determining the actual beneficiary, as well as the correct fulfilment of their reporting obligation to the Tax Agency".

It also states: *"In the field of prevention, together with the generalization of the transfer of tax information and the extension to new groups of the draft declaration, the most relevant lines of action are the following:*

Systematically offer taxpayers new information that is obtained from third parties, including that from automatic information exchanges, without prejudice to the fact that in certain cases the initiation of verification actions may proceed directly.

Sign codes of good tax practices with taxpayers and advisers based on the principles of trust and transparency.

Strengthen the cooperative relationship model with the publication of the administrative criteria applied by the AEAT in its actions and the establishment of two-way channels in collaborative forums for the unification of criteria and the reinforcement of legal certainty and prevention, and where appropriate, the completion of the procedures under agreement and the early resolution of tax disputes.

Facilitate extending the cooperative model to the international sphere, promoting with other countries formulas for the reinforcement of bilateral or multilateral legal certainty.

Find convergent strategies with the generalization of self-compliance among companies, in such a way that their position on the tax risk, greater or less, that each one wants to assume, is not formulated in the abstract, but with reference to previously known administrative criteria for which they can set their position".

With these conclusions we think that, at least for the time being, we can outline an answer, of course, about the following question: "Where does the automatic exchange of information lead?"

In our opinion, this leads to a generalization of the rights of the taxpayer as a citizen, insofar as they are no longer specific rights under the tax field, but rather have their roots in human rights and, therefore, constitute a global standard. Although at this point we think that the inclusion in Title X of the Organic Law on Information Protection of the digital rights of citizenship contemplated in Article 18.4 of the Constitution could reduce the uniformity that the General Information Protection Regulation intended to establish to solve the deficiencies generated in the previous Directive 95/46 CE.

On the other hand, the copious information obtained from the automatic information exchanges may give way to a cooperative compliance policy in which taxpayers and the Administration can assess in advance the risks they may incur and the way to resolve them.

Finally, we must refer to the 2019 Tadeus Declaration, issued in Helsinki on September 17 and 18, 2019, in which the Directors-General of the EU tax administrations committed themselves to closer cooperation among their administrations and to explore possible solutions for similar problems they face, all within the framework of the Fiscalis program.

For these purposes, it is interesting to highlight the commitments made:

- Build trust and improve the level of tax compliance through legal certainty and compliance risk management.

- Facilitate coordinated positions among tax administrations in international forums.

- Promote effective coordination with the OECD and with the forum on Tax Administration.

There is no doubt that if tax administrations act in an increasingly coordinated way, common practices can be established that facilitate the application and interpretation of the rules and that allow the establishment of common standards of the rights of citizens in relation to taxation issues.

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THE CHALLENGES OF TAX ADMINISTRATIONS

facing the future of work in the new reality

Rodrigo **González Cao**

SYNOPSIS

The future of work in the new normality magnifies unresolved structural issues such as job insecurity, informal employment and the marginalization of transactions that erode the tax base. The challenges include redesigning tax administration processes, segmenting taxpayers based on their behaviour, introducing new technologies, strengthening human talent and professionalizing inspection bodies. The objective is to broaden the taxpayer base and ensure the collection of Social Security contributions to strengthen the sufficiency, sustainability, and universality of social protection systems. The current situation of discontent and disintegration is an opportunity for this change.

CONTENT

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INTRODUCTION

The socio-economic crisis caused by the health pandemic finds us going through a transition to the future of work in the framework of the so-called Fourth Industrial Revolution.

In this context, tax administrations are forced to walk an uncertain road that drives us to review the usual way of carrying out the tasks and the management models.

We notice that certain disruptions are happening, but we are not sure what exactly will happen if they take place. It is a double unknown, which represent an important intellectual challenge.

As a Tax Administration we can analyze hypotheses, create strategies, and make predictions on future behaviors, but then something totally unexpected happens, completely challenging the certainties we have built from our experience.

In this process of development, the transformation is very fast, the context is unpredictable and Tax Administration management is influenced by many changes: sociological (mutation in lifestyles, new family models, resolution of gender issues, crisis of the phenomena of urbanization and concentration in large urban agglomerations), technological (with the universalization of digitalization in all spheres), economic (ultra-competitive market, trade wars between trading blocs, and constant change of guidelines and rules), political (where the context mutates relentlessly and paradoxically), environmental (with the increasing importance of sustainability and the impact of the carbon footprint), and demographic (growth of life expectancy, falling birth rates per fertile woman, increase in urban population, growing demand for social protection). These changes impact on the design of Social Security and the demand for its coverage benefits, but also on the modalities of employment and with the issue of how the Tax Administration collects the labor payroll contributions in a context of falling public revenue collection.

All these changes are intertwined and, by defining the governance programs of tax administrations, we can fall into the simplification of believing that the challenges are one-way problems with a single correct solution, instead of considering them as polyhedrons with many edges. However, we can take the proper decisions if we act accurately, with a correct and timely diagnosis.

1. A DYSTOPIAN CURRENT REALITY OF DISCONTENT AND UNCERTAINTY

At the social level, citizens are experiencing a period of growing dissatisfaction and frustration influenced by the gap between the promised quality of life and the poor achievements, among other factors.

Among the root causes we may enumerate, among many others, the decline in the level of education, the shortage of workers with technical training according to the jobs most in demand, increasing levels of poverty and social exclusion, the breakdown of the level of employment, high rates of youth unemployment and an unequal distribution of income. But we can also add to the unabated inflationary processes that have a strong impact on the devaluation of the purchasing power of wages.

All these factors of social decomposition have an impact on a productive disintegration enhanced by the informal employment of one third of employees, which is magnified in a vicious circle by marginal economic circuits, high fiscal pressure and precarious working conditions, especially of young people, women, the lower income quintile and migrants (**INDEC, 2020a**). For this reason, the instability referred to is not due to a specific fact, but is a multi-causal structural challenge and carries a long history of frustrations. All these indicators have deteriorated with the socio-economic crisis that has followed the pandemic health crisis.

Tax administrations, in their specific field of action, face a great challenge in combating these unresolved structural challenges that amplify the growing labor precarity and the marginal circuits of the circulation of goods and services, a vicious circle that ultimately impoverishes citizens, diverts tax resources and plunges sectors of the population into an underworld of vulnerability, exclusion, corruption and evasion.

While a number of classic stabilization measures have been implemented on different occasions, with emphasis on fiscal discipline, they neglect the incomes of the main economic actors, especially workers and small employers, in economies where domestic consumption is an important driver of their dynamism.

Then, in the face of the social discontent that they generate, when a more heterodox approach is adopted that also seeks to defend employment and income, actions to control prices, wages and exchange rates necessarily arise. All this impacts fully on the collection of public revenues and complicates the day-to-day work of the Tax Administration.

In a context of external restraint, some propose to increase the rate of savings, which would only be possible by carrying out a profound tax reform in order to achieve a more efficient and, above all, broader-based taxation system, since, as we have pointed out earlier, a significant part of the economy operates on marginality and savings are doubly affected by taxes and high inflation values.

As a result of this degradation and swaying responses, it becomes an unsustainable task to carry out a solid and long-term integrative planning, with a resulting anomie and regulatory incongruity, all of which ultimately results in a gibberish of objectives, overlapping of tasks and disorderly work.

These economic and social changes have an impact on a continuous change of priorities for Tax Administration, on the volatility of strategies and targets and, generally, on the stoppage of ongoing processes that are left half-way.

2. INFORMAL EMPLOYMENT FEEDS MARGINAL CIRCUITS

According to data from the National Institute of Statistics and censuses (INDEC) of Argentina, prior to the pandemic crisis, the category of "*salaried without pension saving*" represents one in three salaried workers in relation to dependency (**INDEC, 2020a**), most of them in a social situation of vulnerability.

In the second half of 2019, the percentage of households below the poverty line was 25.9%, comprising 35.5% of the total population and 52.3% of children under the age of 15. The average income of this vulnerable population is 39.8% below the poverty line (**INDEC, 2020b**).

In addition, the annualized values of the components of gross value added (GVA) at basic prices for the first quarter of 2020 reflect a share of 49.8% for remuneration for salaried work (**INDEC, 2020c**). The short-term picture is not encouraging, and some indicators may deteriorate as a result of the post-pandemic socio-economic crisis.

High levels of poverty and unemployment, the decline in the purchasing power of wages and the growing inequality in income distribution, in addition to generating social discontent, fuel a vicious circle consisting of job insecurity, unhealthy working conditions, occupational accidents, long hours, low pay, absenteeism and high turnover of workers.

In this context, being precarious, rather than stimulating the development of personal potential, the work generally becomes a physical and emotional trap that magnifies the conditions of social exclusion in which the most vulnerable workers are stuck.

The generalization of informal work undermines the promises of a shared well-being that have kept the social cohesion and its persistence over time, deteriorates the confidence of citizens in democratic institutions.

In addition, increasing insecurity and uncertainty fuel the growth of isolationist behaviour and the emergence of chauvinist shortcuts to uncompromising nationalism or violent and uncontrollable social outbursts that are difficult to channel.

Clearly, the social contract has been applied unevenly and incorrectly depending on the region of the country or the economic activity under consideration and, in this context, despite the efforts of the Tax Administration, many workers in the rural and informal economy today do not have access to the coverage of contributory social security subsystems that protect them from vital contingencies.

A life coverage that is the basis of the social contract that ensures workers a fair share in economic progress, respect for their rights and protection from the risks to which they are exposed in their daily work.

The absence or failure of the social contract harms everyone and dynamites the social peace, which is why it is important to strengthen this commitment through effective actions of tax administrations that expand the base of taxpayers with the objective of ensuring the financing of universal access to social protection layers (**ILO, 2018**).

Many "solutions" that are formulated to remedy the economic conditions, taxation and regulation of the labour market, obviate the mechanisms of the internal market and for the processes of segmentation in sub-labour markets on which already warned prematurely Michael PIORE (1972) in "*Notes for a theory of labor market stratification*", and other subsequent publications of your authorship that challenges the assumption of the neoclassical theory in respect of which the labour market operates as a fair of standardized products, and criticises, in that simplification, that certain "*determinant of itinerary*" as the issues of training, family, income, and social, among many others, are not considered

To understand the phenomenon of informal employment in our context we must consider that each worker has skills conditioned by the design of the curriculum student and the trajectory it has traveled under variable economic, social and demographic, administrative rules, social norms, customs, frames, cognitive and information networks. All of these factors, taken together, determine the individual actions of workers and employers and their tax morals and, in aggregate, the entire domestic labour market, sectoral sub-markets and all taxpayers.

3. SOCIAL PRECARITY IN THE FOURTH INDUSTRIAL REVOLUTION

3.1 Human talent in the knowledge economy

We understand the knowledge economy, in the context of the Fourth Industrial Revolution, as the integrated combination of productive activities that rely on the intensive use of technology and require highly qualified human talent.

This combination of high technology and high qualifications generates changes in the productive organization of companies. Companies that have a dominant position in their sector and do not own physical assets and sometimes employ few workers are one expression of this phenomenon. Thus, in the" top ten "of the largest companies listed on the stock exchange we find five "technological": Apple, Alphabet (Google), Microsoft, Amazon and Facebook. These knowledge-based service clusters year after year represent a higher percentage of GDP.

Recent legislation to promote the knowledge economy covering the software, audiovisual content, Industry 4.0 and biotechnology sectors provides for a reduction in employers' contributions to Social Security, allows exporters who have paid taxes in the country of destination to deduct them from corporate income tax and provides them with "fiscal immobility" (not to increase their total tax burden during the period of the promotional regime). Anticipating that the taxpayers of these sectors will increase in quantity and proportion to the total economy, and that potential beneficiaries will surely take advantage of these fiscal advantages, it is possible that the collection of public revenues will be impacted in a context where every cent counts in order to meet the post-pandemic economic recovery.

But not all new technologies emerge in this integrative dyad with highly skilled human talent. New challenges also arise for the effective application of social protection of workers in relation to dependency in certain modalities such as the sporadic employment of "digital platform workers" (**GONZÁLEZ CAO, 2018A**) in the framework of the "small jobs" or "*gig economy*".

In the logic of the economy of small orders, the worker is called to perform a specific task, using his knowledge about the activity, his labor and the necessary means and, in return, charges a predetermined fee, and is "latent" temporarily, waiting for the next task.

In addition, the tendency to high turnover of staff, low qualification, previously expressed in employees of fast food chains, goods repositories and cashiers of retail stores, is exploited nowadays by the developments that rely on the "economics of digital platforms" to mount business structures based on these disruptive technologies at a marginal cost close to zero (**MGI, 2016**). Structures that feed on workers who, in many cases, have lost a stable job as a result of the post-pandemic economic crisis that we are going through and resort to these disadvantageous hiring to at least ensure a minimum income for their families.

While these digital platforms provide new sources of income for many workers, their ethereal "cloud" Nature challenges the creativity of tax administrations to improve the enforcement of tax, labor and Social Security laws in the face of lack of physical establishment and relocation abroad in low-tax countries.

In some of these platforms there is an abusive trend in hiring where work is sometimes poorly paid, often below current minimum wages, and there are insufficient timely and effective formal mechanisms to deal with unfair treatment.

As everything indicates that this form of work will expand in the future, it becomes necessary to develop appropriate legislation and professionalize the tax inspection and audit bodies dedicated to the control of formal employment, the receipt of Social Security contributions and the correct taxation.

When we analyze the new ways of working through digital platforms we find, among many others, five major groups that stand out:

- home delivery services,
- passenger transport services by means of vehicles with driver,
- home maintenance services (Gasman, electrician, plumber, installer of air conditioning equipment, etc.),
- home cleaning and housekeeping services and,
- home cooking services.

We will extend a little more on the first two (delivery services and drivers of vehicles) since they are the services that have spread most in number of users and providers during the measures of health isolation

that we face and are also the sectors on which more journalistic articles and academic studies we have been able to compile to present their operational modality.

3.2 Digital platform workers delivering products at home

We can include delivery service providers within the "last mile workers" classification by **AUTOR and SALOMONS (2019)**. In each of the countries where a few large companies have been established, they concentrate most of the home delivery activity and a large number of shops have "outsourced" the delivery service of their products and maintenance, displacing those who were previously employed in these tasks towards the new platform modality and, sometimes, towards a precarious job.

In general, these digital platform companies ignore officially the employment relationship that is attributed to them with respect to the delivery agents who work for them.

When analyzing the concept of territoriality of taxation, we find that, in the Argentine case, the three main companies have tax domiciles incorporated in the country, commercial offices and are registered with the Tax Administration as employers and as taxpayers in the taxes that correspond to them. From the analysis of labor payrolls, it emerges that, although they are registered as employers, they only recognize as their own workers a small group of administrative, telematic technicians and support agents.

However, for the purpose of working in such companies as a delivery agent, the worker is required to prove his identity and personal data, to present a criminal record certificate, the ownership of a bank account, a cell phone and, in some cases, his tax status as a self-employed worker. It has been found that the majority choose to register as a single tax taxpayer, abusing the simplified small-taxpayer scheme that is designed for self-employment, rather than for the purpose of concealing a covert employment relationship. In this scheme, it is the worker who must bear the cost of Social Security contributions, the corresponding taxes, and the health insurance.

In case they do not know how to register as an independent worker before the Tax Authority, the digital platform offers a management service that invoices them separately for about fifteen US dollars.

Workers undergo mandatory pre-training provided by the contracting company and are repeatedly told that they are "entrepreneurs".

The worker must pay an amount of money as a guarantee for the work uniform and the thermal box in which the products are transported. Both elements bear the colors and logos of the company and are received in loan.

When analyzing the bond of workers with the digital platform emerge characteristics of a technical, legal and economic subordination, which is defined by the sanction against the refusal to make orders (slowing their rate of acceptance, therefore, their income), the allocation of the task (which implies the distance and the time in which the order must be completed), the price of the service and tipping, clothing to wear, the training given and the collection of remuneration for the tasks provided.

In this regard, it is important to highlight the fact that the dispatcher does not bear any risk with regard to the economic activity carried out by his employer. Even in the case of receiving cash in the context of a delivery, the worker would have to go to a local collection chain to deposit it into a bank account in favor of the digital platform.

In this aspect we find a wide field for the control of formal employment and against job insecurity by tax administrations with the aim of proving the technical, legal, and economic subordination. Without prejudice to this, in order to avoid contentious situations that take a long time to resolve in the courts, it would be highly desirable to assess in the future the creation of a specific legislation on the workers' labor rights and employers' obligations to Social Security.

In the Labor justice system, there are already some rulings that define that the delivery person is a worker in relation to dependency, clarifying that he is not a self-employed worker nor an entrepreneur and that he has been incorporated into the employer's organization, which pays him and on whose account and interest he works.

3.3 Digital platform workers driving passenger transport vehicles

The other type of work through digital platforms that has been most widespread in the face of sanitary restrictions to use public transport are the services of contracting passenger transport by means of vehicles with driver.

In Argentina, two companies stand out among the largest and most important companies in the country, and with both we find disparate tax behaviors.

The company that first started offering services does not have a regular company in the national territory or commercial offices. In some province in which the local regulation of vehicle transit has imposed the condition of enabling a local office, the fulfillment of this requirement has been simulated through the rental of a premises in a shopping center by a different company, and for whose care they hires casual workers through a temporary employment agency.

In order to avoid local taxation and avoid the declaration of their employees before the Tax Administration, they have resorted to a complex network of companies, mainly in foreign countries. One of these companies is based in the United States of America and is the one that develops the Computer Application "*app*" and the owner of the intellectual property and other rights of the trademark.

Other companies in the economy as a whole are located in low-tax jurisdictions, the main ones being the Netherlands, Barbados, and Delaware.

Finally, there are certain satellite companies that are locally integrated in the country and are responsible for paying drivers.

To register as a driver on the platform, you must be over 21 years old, have a certain type of car, have a driver's license, and report a valid car insurance policy.

As with home delivery companies, the company recommends that the vehicles drivers must be registered with the tax authority under the special regime for small independent taxpayers (single tax).

In general, the payments made by travelers with their credit card are tranferred abroad, except in a certain period when some judicial measure was in force that has prevented it.

Drivers are paid a quarter of the fee charged, which returns to the country through triangulation with local companies that receive the funds from abroad.

To avoid informing the registries of the Tax Administration, the company asks drivers to not issue invoices for the services they provide, causing them to breach their alleged tax obligations, on the one hand, but, on the other, recognizing in the facts that there are not third parties who invoice a service to the company,

but workers in a relationship of dependence that provide tasks to their employer.

Recently, the Superintendence of insurance of the Nation has established a regulation in this regard, considering a special insurance policy for the "vehicle providing transportation of persons or products through a technological platform".

In the case of the platform company there is an insurance policy contracted by foreign companies located in the Netherlands that covers both drivers and passengers in the event of potential accidents.

As regards the labor rights of such workers and the regulation of Social Security contributions, no specific regulation has been legislated.

From the analysis of the characteristics of the contract between the drivers and the platform, elements of technical, legal and economic subordination arise, since the drivers are instructed, controlled and remunerated by the platform, in a framework of assignment of tasks, distances, prices and ratings that resembles in its conception the description previously described for home delivery agents. For this reason, it is also observed that there is no "company" of drivers, although they are called "Driving partners", but a company that, through the work of its workers in relation to dependence, obtains a profit, and is the one that assumes all the risks of the activity. By not having a permanent establishment situated in the country, the Tax Administration seeks to apply the legal concept of responsible solidarity referred to in the labour law and Social Security with the objective of uncovering the fictional veil, the corporate dummy created by the conglomerate of foreign companies, conduct which not only is causing a fraud to the Social Security and taxes in general, but also constitutes unfair competition for other providers of contract services transport of passengers by means of vehicles with driver and car with an official taximeter.

In this case, the Tax Administration must pay special attention to the potential maneuvers of harmful tax planning that result in a pernicious laboral planning and data indicating an overt bad faith on the part of the conglomerate entrepreneur, which involves a brush of related companies, most of them incorporated in countries of low taxation, without real domicile or commercial offices based in the country, who manage the operation of transport services offered through the digital application without staff or assets in their name established on the national territory.

3.4 The impact on jobs

These new forms of work, which have rapidly spread, taking advantage of the gaps in labour and tax regulations and the restrictive health measures imposed by the Pandemic isolation, in the long term they crystallize into a precarious employment relationship. This will lead to even greater disruption, which, if not actively directed by legislation and control authorities, will end up further degrading the social contract. But the impact is not limited to the digital platform workers.

As work modalities such as sporadic work become widespread (**GONZÁLEZ CAO, 2018A**), remote work, telework and *part-time work*, as is already the case today with digital platforms, if there is no clear legal framework, concrete rules of play and effective controls, many companies will move from being employers to being perceived as mere organizers or intermediaries between supply and demand (**MGI, 2016**), disregarding the social coverage of workers (**ILO, 2019**) in a clear retreat to the lack of protection that prevailed a century ago.

Many authors suggest that accelerated technological progress will quickly lead to higher levels of job automation and, consequently, massive job losses. By transitive effect, this scenario will lead inexorably to an increased demand for unemployment insurance and social security benefits, both contributory or granted, the latter financed with taxes, which will erode the

adequacy and sustainability of benefits and, ultimately, public revenues in a stage of post-pandemid economic recovery that already, by itself, will require a greater effort of the public institutional apparatus to ensure the social protection of citizens. The progressive erosion of mid-skilled jobs will have implications for the financing of the contributory systems and will add social pressure on social security programmes and benefits, which will absorb an increasing share of the public expenditure budget.

Whatever the fate of the events ultimately turns out, it is clear that this Fourth Industrial Revolution, in addition to rapidly transforming the nature of work, will also change the way Tax Administrations collect Social Security contributions, and taxes in general.

Consequently, it is necessary to foresee the tensions that will arise from this evolution in industrial relations because the digital economy will progress continuously and at an increasing pace by changing all the assumptions on which we conceive the systems of inspection and tax audit, the financing of Social Security and the conditions of employment. And so, without clear strategies to control the informal employment by tax administrations, inequalities that already exist today will deepen and job insecurity will grow (**IEFPA, 2018**).

4. THE TAX ADMINISTRATIONS' CHALLENGES

Effective implementation of fair fiscal policies is crucial for financing the investment in universal, sufficient, and sustainable social protection, the demand for which is growing in the context of the post-pandemic socio-economic crisis.

To do this, the design of the tax system must be consistent with the promotion of decent work, economic growth and enterprise development, and the collection of public revenues must be sufficient to meet the ambitions of a people-centred social protection programme.

In this sense, day by day the concrete challenges in this new normality in the framework of the Fourth Industrial Revolution grow so that companies with highly digitalized business models effectively pay their taxes and avoid the erosion of the tax base and the shifting of profits.

4.1 The challenge of redesigning the tax administration processes

The original design of some tax administrations lacks the notion of value chain because it works with a traditional Fordist or Weberian concept. Consequently, since there is no concept of integration, either vertically or transversely, the actions have a great dispersion and lack alignment. The criteria of governance of traditional Tax Administrations have become obsolete because they are more associated with the era of the first industrial revolution than with the heady times of liquid modernity where the planning horizon suffers rapid changes, uncertain, paradoxical, and intertwined.

Along with the redesign of processes another path that we should start to follow is the ability to analyze data. The main educational gap in the management of human talent in tax administrations is the need for greater professionalization of their research and control teams, with the ability to analyze and apply *big data* and *smart data* to the reality of tax compliance control and non-compliance management. When analyzing the different areas of a Tax Administration, we notice that it lacks analytical sophistication. Not only for today's photo but, also, to predict the situations that will arise in the short and medium term in a context of high volatility. Evasion phenomena, for example, can be predicted in time and space in different economic sectors, but it must be considered that there are many realities within each sector, many sub-sectors, regional particularities and "bubbles".

On the other hand, in the future the expansion of the digital economy presents opportunities for the management of the payroll taxation and Social Security financing if you know how to take advantage of digital

technologies (analysis of massive data, *blockchain*, artificial intelligence) to improve vital administrative processes and better identify cases of fraud, error and evasion.

In turn, the digitalization of tax administrations also creates new responsibilities for Social Security, mainly with regard to ensuring the safe storage, protection, and proper use of personal data. In the current context, cybersecurity risks are universal and ongoing concerns that are often not adequately addressed.

The organization of labor and Social Security Institutions represents a powerful tool for transiting the transitions to the future of work that arise in the context of the new normality. However, in each country this organization is made in a different way, often because of the influence of its history, sociology, and local economy.

Economist Michael J. PIORE and sociologist Andrew SCHRANK in "*Root-cause Regulation: Protecting Work and Workers in the Twenty-First Century*" (2018) suggest that regulatory oversight has failed to maintain core labor standards in the United States as uncompensated overtime, hazardous conditions and harassment in its various forms are on the rise. The complex model of U.S inspection is organized functionally in various areas of specialization, regulated and operated by a dozen of government agencies, different, corresponding to different levels of government (the Administration of Occupational Safety and Health; Division of Wage and Hour Department of Labor; the Committee on Equal Opportunities in Employment; the National Labor Relations Board, the Federal Service of Mediation and Conciliation, and others). Each of these units has a responsibility restricted to its specific function, has specialized inspectors and its objective is to deter non-compliance through sanctions, mainly fines and rarely criminal sanctions. These institutions, created during the Fordist economy of the twentieth century to stop abuses by employers, represented a division of the public sector labor that has become ineffective in the present era as, with the decentralization of production, subcontracting and self-employment, the costs of deploying specialists from multiple disconnected government units have become uneconomical. In summary, the US model was designed for the inspection of mass production enterprises by very rigid specialists and is not suitable for today's decentralized employment as **PIORE and SCHRANK (2018)** conclude. Proof of this is that the United States, with its complex regulatory system, has one of the highest rates of occupational mortality in the developed world, and there is a perceived deterioration in working conditions in general.

PIORE and SCHRANK (2018) also analyze the generalist system of labor inspection and Social Security that prevails in Latin America, in which a single agency regulates all labor aspects in accordance with conventions 81 and 129 of the International Labour Organization. In general, the Latin American system relies on a holistic perspective of generalist inspectors and multitasking where the inspection task points to the root causes of non-compliance. This analysis concludes that, in the current context, the Latin American concept could be more flexible to adapt to changing market conditions in the new reality.

In a world where nearly 3 million workers continue to die each year as a result of accidents at work and occupational diseases, the strengthening of labour and Social Security institutions ensures adequate protection for all workers, including an adequate minimum wage, working time ceilings and safety and health at work. There is a clear synergy between safety and productivity. Other factors include the clear economic impact of occupational accidents and diseases, the increased productivity in safe and healthy working conditions, and a close correlation between national competitiveness and national rates of occupational accidents.

The transition to the future of work in the Fourth Industrial Revolution includes a time of transition between the certainties of the twentieth century and the unpredictable and paradoxical of the Twenty-First Century. A transition so broad that goes beyond

digitalization and the incorporation of technological tools into tax administrations and challenges us to redefine our procedures and regulations. Renewal processes in tax administrations must advance in multiple aspects simultaneously, it is not enough only to make million-dollar investments in ”hard “ (hardware) technology. Simplification and transparency of procedures and access for all citizens to an Electronic Single Window (“One stop shop”) should accompany the review of processes to identify tasks that are obsolete or that have become superfluous over time. If progress is made in these areas, the introduction of new technologies will have a much greater impact.

4.2 The challenge of introducing new technologies in Tax Administration

Technology-based changes should be implemented by tax administrations to redesign their internal processes and mitigate the incidence of error, fraud, and evasion.

The challenge is to understand that it is not enough just to invest in equipment, hoping that its mere incorporation will generate immediate benefits, but that digital transformation should be conceived as the conversion of activities, processes, capacities and business models of tax administrations from the application of new digital technologies.

In the field of action of tax administrations on the marginal economy and informal employment, the new normality in the framework of the Fourth Industrial Revolution is a disruption that will digitalize and skip the intermediates from the current working modalities and, consequently, raises concern about the future of Labor Relations and wages. Labor Relations, which are the taxable event giving rise to the collection of Social Security resources, and remunerations, the taxable base from which the contributions that finance the system are calculated.

But the introduction of new technologies is not exclusive to taxpayers.

The challenge for tax administrations in the future of work is to achieve a holistic and multidisciplinary strategy of action, combining on the one hand the experience of the control plans of previous years, with the hard core of disciplines such as data science. If there is a priority, it is to professionalize middle and senior management with analytical capacity of *big data*. The amount of data produced for decision-making is, today, far from being properly analysed and how efficient strategies to reduce tax evasion and informal employment can be encouraged from that. To summarize the holistic approach, mathematicians, anthropologists, and sociologists must coexist in the same working table in addition to specialists of the business area (Taxation, Customs, or Social Security).

Technologies such as artificial intelligence, robotics, and sensors involve countless possibilities to improve our daily work: information extraction using data mining techniques can help the Tax Administration to identify high-risk sectors and to improve the inspection systems of informal employment; the digital technologies, the applications and the sensors, can facilitate a joint work with companies and the social partners for the monitoring of working conditions and compliance with labour legislation in supply chains; the Blockchain technology, that provides transparency and security through chains of blocks, encrypted and decentralised databases, could ensure the payment of minimum wages and facilitate the transferability of qualifications and the background of the social protection of migrant workers, as well as the payment of social security for those who work on digital platforms or in certain sectors conductive to multiple precarious jobs (moonlighting), such as workers in private homes or the harvesters in agriculture.

Today there is no industry or profession that is not affected by the digital transformation and every day we discover a new “*tech*”: *fintech* for finance, *adtech* in advertising, *agritech* in agriculture, *greentech* as green technologies and even health care as *healthtech*. It is time for tax administrations to really be *taxtech*!

Mounted on this wave of change is emerging a potential legion of technologies that synergize with each other: the cloud, artificial intelligence, robotics, the internet of things, the massive data processing with *big data* and *smart data*, *machine learning* and *deep learning*, virtual reality and augmented reality. Each of these technologies has a potential use by tax administrations.

4.3 The challenge of strengthening the human talent in Tax Administration

But changes in regulations, business model, powers of tax administrations, processes, and technology to improve results are not even sufficient. Today we are going through a real revolution, strongly disruptive regarding the organization of work, internal culture, leadership, communication, but above all, the management of human talent, profiles and competences. These changes must accompany the redesign of organizations, which will change from the paradigm of control to a new logic of collaboration, diffuse borders, and open innovation.

Among the changes regarding the management of human talent, we can also mention that they change the relationship of people with work, mutates the attributes valued by the staff, agents of the tax administrations want to work in a different way, discover new modalities such as telework and performance based on results and, mainly, value having more time for their personal projects.

In the formation of human talent in tax administrations, on the one hand, positions based on characteristically "human" skills such as creativity, initiative, critical thinking, persuasion, emotional intelligence, and leadership should be encouraged. This will be needed in roles such as taxpayer service, guidance and consultation, Human Resources Management and training, but on the other hand, specialists in the latest emerging technologies will also be in demand: artificial intelligence and machine learning, process automation, cybersecurity and blockchain.

From a classification of jobs by **AUTHOR and SALOMONS (2019)** we can identify two clearly differentiated groups from which tax administrations could refer to strengthen their tasks: the "frontier" jobs and the "last mile" jobs.

The so-called "Frontier jobs" are a set of occupations, consisting of installing and maintaining new technologies, which today are disproportionately occupied by university-educated workers (v.gr.: integration of robots and process automation, search engine optimization, predictive matrices and pre-selection algorithms of audits).

On the other hand, there is a new category of work that includes tasks that are almost automated but still have some human participation, such as *call centre* operators, guidance and public service workers in local offices, data entry employees and inspectors who specialize in face-to-face checks at taxpayers' premises. These occupations, which are called "last mile" jobs, are still needed in tax administrations for now.

4.4 The challenge of segmenting taxpayers based on their behavior

The Tax Administration must base its tax control programs, and particularly of informal employment and the marginal economy, on risk management strategies, that is, procedures aimed at minimizing error, fraud and evasion using the legal tools granted by the tax code and procedural rules.

The first step is to define the anomalous situations, which must be sorted in matrices, which will be managed through work programs.

The control of informal employment and the marginal economy should be structured around risk mitigation actions around the segments of taxpayers and their obligations. Each taxpayer must be assigned a risk value based on his or her background in the Tax Administration databases. The risk must be the decisive

factor of all processes, since the public has entrusted the Tax Administration with the responsibility of ensuring the financing of the General Budget, and especially to solve the increasing social protection benefits that will be demanded in the period of post-pandemic crisis recovery.

When assessing the risk of each taxpayer, we must understand that the labour market does not function as a homogeneous whole but is composed of different segments. It is possible to segment Labor Relations in function of the tax behavior of the employers **(GONZÁLEZ CAO, 2018B)**.

In the case of the Argentine Tax Administration, we can distinguish a primary market, associated with "typical" employment under the Labor Contract Law (with some stability and compensation for dismissal, with Social Security coverage and with wages negotiated in an equal framework) and a secondary market, associated with informal employment, the marginal economy and job insecurity. This secondary market includes all industrial relations which are insufficiently covered by formal systems or not covered at all as defined in Recommendation No. 204 of the International Labor Organization.

Michael PIORE (1972) in "*Notes for a theory of labor market stratification*" proposed an additional division within the primary sector in a top segment (positions and mobility patterns typically associated with professional and management positions or skilled worker white-collar) and bottom (manual jobs or workers in blue collar).

The upper primary segment is characterized by higher salaries and status, greater opportunities for promotion, lack of formal supervisory mechanisms and some space for individual creativity and initiative **(FERNÁNDEZ HUERGA, 2010)**. In this segment, informal employment has a lower share. In certain industries with a high incidence of technology, such qualifications are increased in the actual performance of work in the company (or similar ones in the same economic sector), so employers maximize their efforts to retain their highly skilled workforce through certain incentives that compensate for the cost of selecting and training new staff if turnover were high.

At the other end, in low-skilled activities, in the absence of an incentive to retain jobs, high worker turnover is incorporated into job planning as a response to the rising labour costs associated with additional seniority pay, the accumulation of vacation days, the increase in redundancy payments and other factors associated with formal contract employment. In this type of activity, the number of salaried workers who do not contribute to Social Security is higher than average in the labor market.

4.5 The challenge of professionalizing inspection bodies

The strengthening of the inspection teams of tax administrations, especially those aimed at controlling Social Security resources, and the holistic approach to the tax behaviour of taxpayers who, in turn, are employers, is a subject that has been rarely studied in the academic literature.

In everyday discourse, some question the supposed rigidity of labour regulations, which they describe as an enemy of job creation and, consequently, without much analysis of the social consequences, push for reforms tending to an unbridled labor deregulation. These supporters of "economic self-regulation", argue that the role of inspection of the tax administration undermines the processes of innovation, globalization, and transformation of the labor markets of the future.

In this regard, after all that we have discussed so far, we can only say that little can be achieved without improving the effectiveness of actions to eradicate forced labour and child labour, promote decent work for all and promote the transition from the informal to the formal economy, paying due attention to rural areas

and the marginal circuits on the periphery of large urban agglomerations.

Consequently, while it is necessary to review and update some labour regulations that may have become obsolete, the control of informal employment and the marginal economy has never been more indispensable.

In Argentina, the Federal Administration of Public Revenue (AFIP) has as mission the application, collection, supervision and judicial enforcement of Social Security resources and any other revenue or contribution that, according to current regulations, must be collected on the payroll.

In this context, a modern system of labour inspection and social Security, its extension to all workplaces in the informal economy to protect workers, and the provision of guidance to supervisory bodies is a necessary condition for avoiding job insecurity and ensuring decent work **(ILO, 2015)**.

A transition to decent employment is based on the consensus that work is not a commodity that can be traded in markets seeking the highest bidder as if it were a fair **(ILO, 1999)** and that, as part of the "social contract", workers have rights, needs and aspirations that must be respected by employers and protected by the public institutional apparatus to ensure a dignified life, with economic security and equal opportunities.

Tax Administrations, and strong Labour and Social Security Institutions, compensate for the asymmetry in the relationship between capital and labor, and ensure that Laboral relations are fair and balanced. A society is more equitable to the extent that so are its legislation, collective labour agreements, employers 'and workers' organizations, and tax, labour administration and social security inspection systems. That is why we say that the fulfilment of the social contract depends on these institutions and, without them, there is no possible contract or lasting social peace.

4.6 The challenge of financing the social coverage recognized as a human right with constitutional protection

The Tax Administration has the challenge of collecting the necessary funds to finance Social Security from the payroll taxes revenues. But the employment relationships and wages of workers, which form the basis for such taxation, are being radically transformed by the impetus of technological innovations, demographic changes, climate change and globalization that have taken on new momentum in the new normality presented in the context of the Fourth Industrial Revolution and the digitalization of the economy.

In addition to being a challenge to tax administration, concern for informal employment and the marginal economy is on the international agenda and today social justice, employment and decent work are explicitly on the UN's 2030 Agenda for Sustainable Development. In this context, the International Labour Organization (ILO) views universal social protection as an inescapable step towards achieving the Sustainable Development Goals.

Social protection is a human right recognized by several international treaties of constitutional rank as the Universal Declaration of Human Rights, the International Covenant on Economic, Social and Cultural rights and the American Declaration of the Rights and Duties of Man.

However, these rights guaranteed by the Constitution and the International Covenants will not be effective while one-third of the employees continue to work without protection, without Social Security coverage, while a considerable part of the population will only be partially and sporadically covered, and changes in the organisation of work create new deficiencies that magnify the informal employment, the informal economy and the inequitable labor conditions. The task of the Tax Administration is to expand the tax base to ensure the contributory financing of the system and to effectively reach the niches and sectors in which informal work and the marginal economy still persist.

5. CONCLUSIONS

The new normality in the context of the Fourth Industrial Revolution and the digitalization of the economy pose major challenges with regard to the nature of work and how tax administrations will deal with error, fraud, tax evasion and the control of informal employment and the informal economy.

The causes and consequences of informal employment and the informal economy still need to be resolved so that the impact of disruptions is not amplified, enhanced by the persistent marginality in which an important universe of economic actors operates.

In regard to the control of informal employment, and the marginal economy the public policies developed in the stage of post-crisis recovery pandemic must not only manage the negative impact of the profound changes that are taking place, but we must act urgently to seize opportunities for strengthening the formal employment and the correct taxation as a necessary step to ensure the social justice such as we have highlighted previously. Although the principles underpinning the social contract are universal, social protection coverage cannot be ensured without sufficient tax revenues to cover the most vulnerable sectors.

Low productivity, unresolved inequalities and a high level of informality amplify the unbalance in skills, competences, and qualifications that the Fourth Industrial Revolution and the digitalization of the economy bring in this new reality.

An inclusive transition to the future of work requires public policies that guarantee decent work and social security coverage, in a context of slowing growth, ageing populations, and increasing demand for care systems for older adults and vulnerable populations.

Decent work is key to sustainable development, as well as to reducing income inequality and ending poverty, with special attention to long-delayed areas on the periphery of large urban agglomerations and rural areas.

To accompany people in transitions implies also to strengthen the social security systems to ensure a minimal universal coverage, minimum protection from birth to old age for all workers in all forms of work, including self-employment, based on a sustainable financing and the principles of solidarity and sharing of risks **(ILO, 2018)**.

The sustainability of social protection systems is increasingly becoming a pressing concern in view of demographic trends, changes in the organization of work, declining returns on investments from countercyclical funds and a reduction in the tax base on which contributions are calculated. In this sense, the role of the Tax Administration is to take advantage of technologies to execute more effective compliance control and non-compliance management processes aimed at expanding the base of contributors to include in the formal economy the third of salaried workers who currently do not have social security coverage and feed the informal circuit.

Despite the uncertainty generated by the advance of digitalization and labor automation, tax administrations must incorporate new technologies as a complement to human work to improve their organizational design, renew their processes and strengthen the management of human talent.

Updating procedures and regulations, along with technology incorporation, will be key to achieving higher tax productivity and better quality of service to taxpayers.

This will require new skills. Today the demand for scientific skills such as data science, engineering and mathematics is growing **(INET, 2016)**, but there are also clear signs of the future demand for soft skills **(IFTF, 2019)**.

That is why it is necessary to adapt the tax administrations' systems of selection of human talent for the work of the future. The permanent training of human talent in tax administrations should be a priority.

We are leaving behind an era in which staff training was structured in a series of technical tax content in a certain period and at a certain age and stage of their professional career so that then, with that learning, the person developed the profession in the Tax Agency for the rest of his or her career.

The speed at which changes take place means that the average life of skills today does not exceed five years, generating the imperative need for people to quickly adopt a lifelong learning model at any age.

No matter how much investment in technology is made, the human factor will remain central and irreplaceable.

The challenge for tax administrations is to ensure that the digitalization of their processes has a positive impact on their relationship with the taxpayer and is carried out in a framework of transition beneficial to all citizens.

The new technological tools, the revision of procedures and the new forms of telework that emerge from the advance of digitalisation force tax workers to acquire new skills to respond to the new challenges of tax administrations.

I hope that the present paper will invite reflection because the time is running out to find solutions and rethink tax designs, current legislation, and the role of tax administrations. Aspects that need to be rethought under the new normality that has burst into our lives. A reality in which many workers demanding increased social protection benefits are being left out of the system while the collection of public revenues that finance them deteriorates.

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Work of Multilateral Agencies against Abusive Tax Practices across the world

-A study from an Indian perspective

Subhash **Jangala**

SYNOPSIS

The objective of this Article is to provide an overview of abusive practices across the world, a brief outline of the actions taken at multilateral forums in preventing the proliferation of harmful practices, a description of measures implemented across the world in general and India in particular in complying with the recommendations of multilateral forums in this respect and the future of harmful tax practices in light of the recommendations of Pillar Two of the G20/Inclusive Framework.

It is seen that while there has been substantial work done by the Forum on Harmful Tax Practice in respect of preferential regimes in member countries of the OECD, there are still glaring gaps leading to BEPS risks across the globe. The implementation of Pillar Two may reduce possibilities for rampant shifting of profits from countries of economic activity to jurisdictions of financial secrecy and lax regulation.

CONTENT

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INTRODUCTION

Adam Smith, a Scottish economist, widely known as the "Father of Economics" or the "Father of Capitalism", in his magnum opus, *An Inquiry into the Nature and Causes of the Wealth of Nations*, perhaps for the first time in the world, referred to the mobility of an individual and its bearing on taxes. He stated thus,

…land is a subject which cannot be removed; whereas stock easily may. The proprietor of land is necessarily a citizen of the particular country in which his estate lies. The proprietor of stock is properly a citizen of the world, and is not necessarily attached to any particular country. He would be apt to abandon the country in which he was exposed to a vexatious inquisition, in order to be assessed to a burdensome tax, and would remove his stock to some other country where he could either carry on his business, or enjoy his fortune more at his ease[1].

Smith was referring to the inherent nature of individuals to move to an environment or situation that provided them the best possible value. Consequently, individuals holding movable stock or assets, in order to achieve absolute advantage, would move to a suitable country to enjoy their fortune "at ease". While Adam Smith spoke about the "push factor" which would lead to individuals move out of a particular country by referring to wars or burdensome taxes, what the global economy is scarred by today, two and a half centuries later, is an enormous proliferation of legislative measures that conceive, construct and establish regimes that function as pernicious "pull factors" depriving countries of their fair share of taxes.

1. TECHNOLOGY, FINANCIALIZATION AND THEIR IMPACT ON HARMFUL TAX PRACTICES

Since the last half century, there has been a tremendous growth in financialization of the economy. One of the characteristic features of financialization is accelerated growth of the financial sector through increased reliance on making profits out of money and other financial products rather than making profits out of tangible goods and services. Since the relevance of tangible factors of production eroded over time and communication and transport technology exploded, economic activity became increasingly mobile. Businesses scouted for sanctuaries with lax fiscal and monetary regulation across the world so as to move their bases away from the countries that provided them with tangible factors of production. This led to the start of what we today call, "a global race to the bottom", where sovereign nations compete to provide tax incentives, deregulations and secrecy so as to attract businesses and corporates. The pull-factor has now taken complete shape and works synchronously with the push-factors to distort markets, erode democracies, reduce productivity, derail economic growth and boost monopolies.

Providing preferential taxation policies in order to attract incorporation of businesses by certain jurisdictions triggers a global discourse on the ease with which incorporated entities can shift their profits from high-tax jurisdictions (that provide markets, labour and services to these businesses) to low-tax jurisdictions. It has been estimated that tax havens collectively cost governments between $500 billion and $600 billion a year in lost corporate tax revenue, depending on the estimate, through legal and not-so-legal means[2]. It is

1 Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, accessed from The Library of Economics and Liberty at https://www.econlib.org/privacy-policy/ on 25th February 2020

2 Ernesto Crivelli, Ruud De Mooij and Michael Keen, May 2015, Base Erosion, Profit Shifting and Developing Countries, IMF Working Paper WP/15/118, Fiscal Affairs Department

also estimated that around 8% of the global financial wealth of households is held in tax havens, three-quarters of which goes unrecorded[3]. This propensity to shift profits and in effect, taxes, on account of non-economic factors is what has been widely accepted to be abusive in nature. Multiple organisations have attempted to tackle the macro-economic risk created by these abusive tax practices. Such measures had received a fillip subsequent to the 2008 economic crisis when, *the world had woken up to two sobering facts: first, the phenomenon* (of profit shifting) *is far bigger and more central to the global economy than nearly anyone had imagined; and second, the biggest havens aren't where we thought they were*[4].

2. START OF MULTILATERAL WORK ON HARMFUL TAX PRACTICES

While the European Union had started the work on harmful tax competition earlier, for the first time in history, in the year 1996, the practice of tax competition was acknowledged at the world stage during the meeting of the Finance Ministers of the OECD Council (Council of the Organization for Economic Cooperation and Development) at Paris. It was agreed during the meeting that for *reinforcing democracy and demonstrating the values and dynamism of the free market, one of the core priorities would be to, monitor the implementation and extend the application of the OECD Transfer Pricing Guidelines and analyse and develop measures to counter the distorting effects of harmful tax competition on investment and financing decisions, and the consequences for national tax bases*[5].

Transfer Pricing guidelines and prevention of harmful tax competition were earmarked as the most important objectives of international tax policy at the turn of the century. Consequently, a Report on Harmful Tax Competition[6] was prepared addressing the harmful tax regimes in the form of tax havens and harmful preferential regimes in OECD member countries and non-member countries.

3. THE 1998 REPORT ON HARMFUL TAX COMPETITION

The report, published in 1998, restricted itself to geographically mobile activities since this sector was the most liable to be affected by tax competition. Criteria for identification of harmful tax practices were arrived at and recommendations were made on how to tackle these practices. Luxembourg and Switzerland abstained from approving the Report and the recommendations therein.

The Report recognized that abusive tax practices affect the location of financial and other service activities, erode the tax bases of other countries, distort trade and investment patterns and undermine the fairness, neutrality and broad social acceptance of tax systems generally, diminish global welfare and undermine taxpayer confidence in the integrity of tax systems[7]. The Report made an earnest effort at offering the tax havens a chance to reform their legislative and administrative arrangements and shift from being heavily dependent on their "tax industries" clearly indicating how entrenched these jurisdictions had become in the global economy

3 Gabriel Zucman, The Missing Wealth of Nations: Are Europe and the U.S. net Debtors or net Creditors?, The Quarterly Journal of Economics, Volume 128, Issue 3, August 2013, Pages 1321 – 1364, https://doi.org/10.1093/qje/qjt012

4 Nicholas Shaxson, Tackling Tax Havens, International Monetary Fund, FINANCE & DEVELOPMENT, SEPTEMBER 2019, VOL. 56, NO. 3

5 Communiqué of Meeting of the OECD Council at Ministerial Level Paris, 21-22 May 1996, Accessed from http://www.g8.utoronto.ca/oecd/oecd96.htm on 25th February 2020

6 OECD (1998), *Harmful Tax Competition: An Emerging Global Issue*, OECD Publishing, Paris, https://doi.org/10.1787/9789264162945-en.

7 Ibid

by the time the report was published. The Report recognized its limitation in comparison to the EU Code of Conduct in restricting itself to geographically mobile activities but justified this contraction in scope as a sacrifice in order to accommodate a wider participation of diverse economies from across the world.

The Report put forth the kind of affects that harmful tax regimes have on the global economy:

a. Distorting investment flows,

b. Undermining the integrity of tax structures,

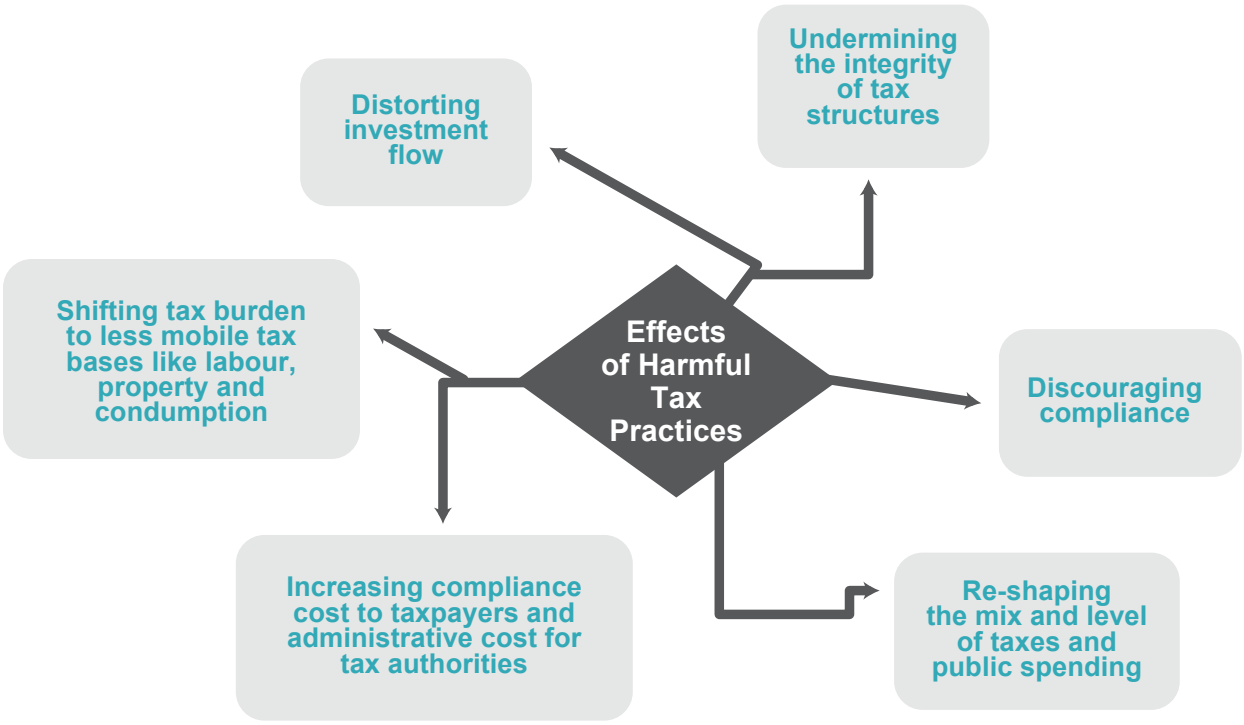
c. Discouraging compliance,

d. Re-shaping the mix and level of taxes and public spending,

e. Increasing compliance cost and administrative cost,

f. Shifting tax burden to less mobile tax bases,

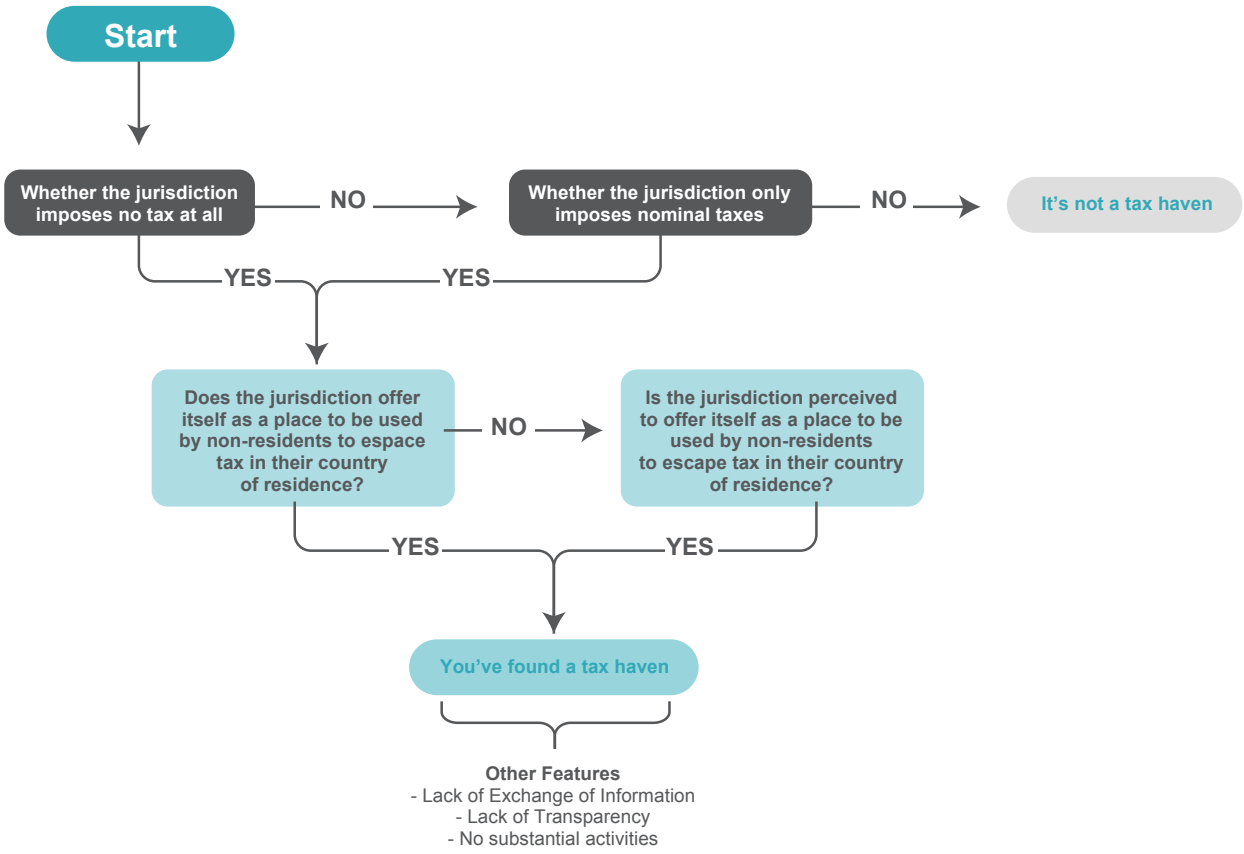
which have been illustrated below.



Having established the urgent need to address the distortions being caused by the use of tax havens, the Report takes great efforts to clarify that the Report, does not, in any way, support or champion the cause of a global minimum effective rate of tax. We shall see at a later stage how this belief took a thorough and faultless U-turn within a span of two decades.

The OECD was not naïve in assuming participation and partnership from the existing tax havens in this exercise against abusive tax practices. The Report, in no ambiguous terms, admitted that Type 1 countries, which do not raise significant tax revenues for domestic sovereign functions and which offer their own jurisdictions to be used for evading tax from other countries will not co-operate with the OECD in these efforts and dedicated, quite forthrightly, the label "tax haven" to these kinds of countries. As we shall see later, this brand has also been watered down, most likely because of the amount of stigma that came to be attached to the phrase. Type 2 countries which had sizeable domestic tax revenues to be collected and which had certain features of harmfulness in their tax law were not designated out rightly as "tax havens" considering their "skin in the game" and a plausible willingness of these countries to co-opt in the fight against the race to the bottom. The countries were stated to have preferential regimes.

Certain crucial factors were identified as critical in finding tax havens. The same have been represented diagrammatically below:



In addition to the features mentioned above, a particularly significant observation made in the 1998 Report was how a haven's close ties with a non-haven country in a dependency style relationship boosts the harmfulness quotient of a tax haven. The observation has proved to be quite prophetic in the sense, multiple secrecy jurisdictions today are crown dependencies with their diplomatic, financial and other infrastructure provisions being provided at no cost by the UK.

In addition to tax havens, the Report discussed about Type 2 countries which would have certain preferential features in order to attract passive income. While four key factors for identifying these preferential regimes were listed, the definite indicator would be the fact that absent this regime, the investment flow would be unlikely to go through the country providing the regime.

The report puts forth three reasons why unilateral measures against a particular regime are only limited in their effectiveness. It states that jurisdictional limits of any tax administration's authority, effect of unilateral measures on a country's own residents and increased administrative cost are reasons which are compelling arguments in favor of multilateral and inclusive measures against abusive tax practices. Multilateral coordinated action is of much higher relevance in respect of preferential regimes since unilateral actions by one country would only lead the activities to be shifted to another jurisdiction offering the same features.

The 1998 report came up with a set of 19 exhaustive recommendations to prevent the proliferation of harmful regimes which were categorized under three sub-heads. Some of the important ones are as follows:

a. Changes to domestic law

   i. Introduce Controlled Foreign Corporation Rules

   ii. Avoid exemption method in relieving double taxation

   iii. Make reporting of oreign operations compulsory for resident tapayers

   iv. Provide information of banking transactions to tax authorities without hindrances

   v. Follow transfer pricing rules in domestic law

   vi. Make individual tapayer rulings public

b. Changes to treaties

   i. Intensify Exchange of Information with tax havens

   ii. Prevent entitlement of treaty benefits to income arising from certain harmful activities

   iii. Terminate treaties with tax havens

   iv. Clarity in the interplay between domestic anti avoidance rules and treaties

   v. Coordinated enforcement like joint audits and assistance in collection of taxes

c. Multilateral cooperation

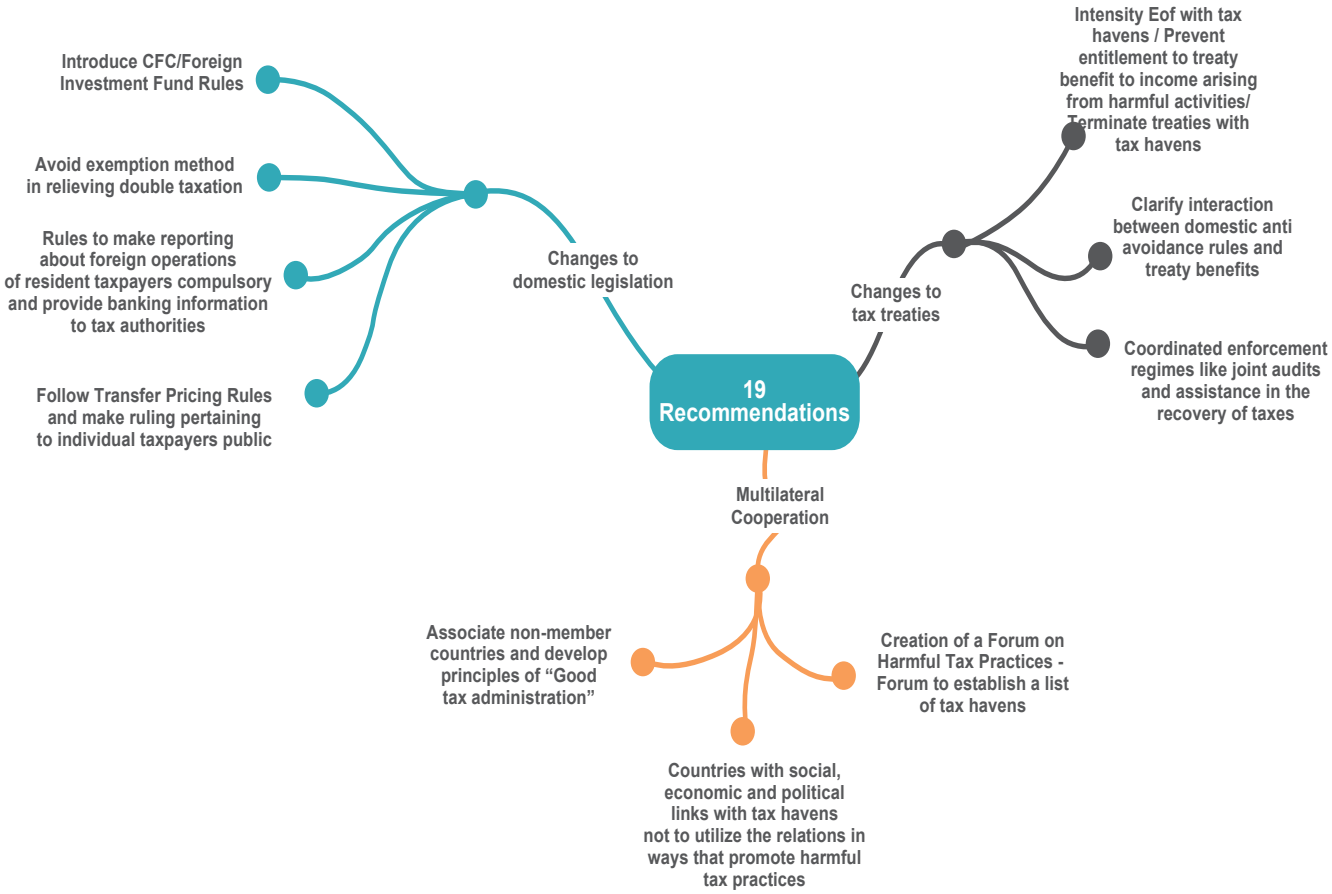
   i. Create a Forum on Harmful Tax Practices

ii. Create a list of tax havens

iii. Countries with dependencies which are tax havens to not use their relations to promote harmdul tax practices

iv. Develop principles of "good tax administration"

These are diagrammatically represented below:



4. THE IMPLEMENTATION OF RECOMMENDATIONS OF THE 1998 REPORT ACROSS THE WORLD AND IN INDIA

With the benefit of hindsight, it may be stated that the recommendations of the 1998 Report turned out to be meaningful and consequential. An analysis of some of the important recommendations and how they were taken up worldwide in general and in India in particular is tabulated in the following table[8].

CFC/FIF Rules

- **World** - Implemented by most capital exporting countries. Almost 50 countries of the Inclusive Framework have implemented. Most EU nations have implemented CFC Rules. BEPS Action 3 has been published by the OECD on deisgn and implementation issues of CFC Rules.
- **India** - Being a developing country, India has put in place a much more customized framework called PoEM Rules (Place of Effective Management).

Exemption Method

- **Mundial** - BEPS Action 2 has recommended restriction s on the use of Exemption method for relieving double taxation in certain cases. Also a part of the Multi Lateral Instrument.
- **India** - More than 90% of India's treaties have used the Credit Method instead of the Exemption Method for giving credit to taxes paid in the other country.

Banking information to tax authorities

- Thorugh automatic exchange of information, 90 countries exchange financial account information on an automatic basis . 47 million offshore accounts with a total value of around EUR 4.9 trillion have been exchanged so far.
- **India** has implemented AEOI, is a signatory to the Multilateral Convention on Mutual Administrative Assistancein Tax Matters and has always ballowed banking ifnormation to be passed on to tax authorities under its domestic law.

Transfer Pricing Rules

- **World** - The main focus of Action 8- 10 of the BEPS project is the policy and implementation of the arm's length principle. Action 13 recommends the furnishing of Country by Country Reports, an important part of which is essentially transfer pricing documentation.
- **India** - Since 2001, Indian legislation broadly reflects the underlying principles of OECD Guidelines. Five of the six methods prescribed in the legislation to compute arm's-length prices conform to the OECD Guidelines.

Make individual rulings public

- **World** - Now being implemented by the Forum on Harmful Tax Practices under BEPS Action 5
- **India** - Has been a member of the FHTP and has been implementing best practices in spontaneous exchange of eligible rulings to partner jurisdictions.

8 Data pertaining to Automatic Exchange of Information accessed from https://www.oecd.org/tax/beps/tax-transparency/

Intensify EOL with tax havens	**World** - More than 500 tax Information Exchange Agreements have been signed since 2000. In addition, Multilateral Conventions have also come into force. **India** - Wide network of DTAAs, TIEAs, Multilateral Conventions which include Automatic Exchange of Ifnormatiom, Exchange of Information on Reqeust and Spontaneous Exchange.
Prevent entitlement to treaty benefit in certain cases	**World** - Main focus of Action 6 of the BEPS Project - Preventing treaty benefits in certain circumstances - One of the minimum standards of the BEPS Project. **India** - Has already implemented the minimum standard through the Multilateral Instrument. Recent treaty negotiations have also inserted the subject-to-tax rule which goes further than the minium standard.
Clarify interaction between domestic anti avoidance and treaties	**World** - Implementation of Principal Purpose Test as a minimum General Anti Avoidance Rule under BEPS. Multiple multilateral organisation including the Platform for Collaboration for Tax have come up with toolkits for the implementation of the minimum standards in developing countries. **India** - India's domestic GAAR provision clearly explain the interaction between domestic law and treaty. India has also implemented the Principal Purpose Test, a BEPS minimum standard through the MLI.
Coordinated enforcement methods	Convention on Mutual Administrative Assistance in Tax Matters, EU Council directives and Article on Assistance in Tax Collection in bilateral treaties have been widely accepted across the globe though implementation is still an on-going exercise. **India** - India has an Article on Assistance in Collection of Taxes in a considerable number of its treaties. It is a signatory of Convention on Mutual Administrative Assistance in Tax Matters. India receives and send requests for collection of taxes regularlly.

5. FOLLOW UP TO THE 1998 REPORT

The 1998 Report was followed by OECD's Progress Reports of 2000[9], 2001, 2004 and 2006. While the 2000 Report published the names of 35 jurisdictions which it had identified as tax havens on the basis of the criteria that were published in the 1998 Report, the work on tax havens steadily tapered off as the progress report went by and the focus of the forum shifted to preferential regimes in member countries. Most of the top financial secrecy jurisdictions of today were let off on the basis of the fact that since these jurisdictions did not levy any tax

9 https://www.oecd.org/tax/harmful/2000progressreporttowardsglobaltaxco-operationprogressinidentifyingandeliminatingharmfultaxpractices.htm (Accessed on 26th February 2020)

at all and whether to levy a tax or not being a sovereign decision, no regime in these jurisdictions was liable for review by the Forum. In addition, the 1998 Report committed the Committee on Fiscal Affairs to explore the issue of harmful regimes impacting manufacturing and non-mobile economic activities at a later date but not much development took place on this aspect in the subsequent progress report. The recently released Financial Secrecy Index by the Tax Justice Network[10] indicates the gaps in the implementation of multilateral initiatives in preventing the proliferation of tax havens and financial secrecy jurisdictions.

In respect of member country regimes, substantial work has been completed by the FHTP. As of 2019, close to 250 regimes in member and non-member countries have been reviewed. Close to 200 regimes have either been abolished or amended to comply with the requirements of substance/ring-fencing/preferential tax rates. The review is an exhaustive one starting with a self-review, a review of the Secretariat of the Forum, a review on the floor of the house and a final recommendation. In addition to review of regimes by the Forum, in order to administer one of the main recommendations of the 1998 report, individual rulings in members of the Inclusive Framework, the absence of which could increase the risk of BEPS have to mandatorily shared within prescribed time limits to a pre-defined list of countries which could get affected by the rulings. Implementation of this transparency framework is also reviewed by the FHTP on a yearly basis.

6. FUTURE OF FHTP – EMERGENCE OF PILLAR TWO

Pillar Two is one of the cornerstones of the Unified Approach proposed by the G20/Inclusive Framework for addressing the challenges of digitalization of the economy. Pillar Two (also referred to as the "Global Anti-Base Erosion" or "GloBE" proposal) calls for the development of a co-ordinated set of rules to address ongoing risks from structures that allow MNEs to shift profit to jurisdictions where they are subject to no or very low taxation[11]. This Pillar seeks to comprehensively address remaining BEPS challenges by ensuring that the profits of internationally operating businesses are subject to a minimum rate of tax[12]. It is expected that the

10 https://fsi.taxjustice.net/en/introduction/fsi-results (Accessed on 29th February 2020)

11 https://www.oecd.org/tax/beps/public-consultation-document-global-anti-base-erosion-proposal-pillar-two.pdf.pdf (Accessed 29th February 2020)

12 Ibid

GloBE proposal may shield developing countries from pressure to offer inefficient tax incentives.

A minimum rate of tax, would, as has been described earlier, propose a revolutionary change to the current architecture of multilateral tax policy. From the 1998 Report, Pillar 2 may be considered a complete volte-face considering the 1998 Report unequivocally proposing a strict denial of a minimum global tax agenda. While this change is a quantum leap, it was also long due. Multilateral measures being taken up under the various Working Parties was trailing cross-border tax avoidance by a substantial time gap. While the finer details of Pillar Two are yet to be finalized, the stage has been set for the creation of a global minimum to work as an effective and robust embankment against the growing tide of the race to the bottom. It is envisaged that an effective, fair and judicious implementation of Pillar Two would put an end to the kind of harmful and abusive tax practices that are prevalent today.

7. CONCLUSION

The work of multilateral agencies against harmful tax practices is perhaps the most important economic fight of the 21st Century. Base Erosion is one of the foundational causes for the growing inequality of income distribution across the world. A combination of secrecy laws and lax regulation is a potent force that can destroy and debilitate the capacity of sovereign nations to raise domestic resources. Before BEPS becomes a new form of economic slavery, sovereign governments need to take decisive and swift action in order to ensure transparency, accountability and free exchange of information.

India's experience with the Forum on Harmful Tax Practices in specific and the BEPS Action Plan in general has been fruitful. While the impact of the BEPS plan is being analyzed, robust mechanisms have been put in place to ensure that India is not impacted by harmful regimes of other countries and that Indian rulings do not affect the tax bases of other countries. While these developments in themselves have a salutary impact on global economic flows and strengthen the linkage between economic substance and reporting of profits, there is a need to arrive at an international consensus backed by strong political will in order to devitalize the role played by the pockets of opacity and islands of preference in international flows of investment and pay-outs.

E-COMMERCE

In developing countries (The Case of Angola)

Altair **Marta**

SYNOPSIS

Electronic Commerce, one of the pillars of the Digital Economy, represents today an important part of the economy in many countries. Its advantages make it quite attractive for those who want to start a business or even strengthen already their area of activity, however, it also brings numerous challenges for all the parties involved, challenges that can only be fully remedied with their involvement and cooperation.

CONTENT

AUTOR

Coordinator of the technical Opinions and International Treaties of the Center for tax studies of the General Tax Administration of Angola and graduated in law from the Faculty of Law of the University of Coimbra, one of the oldest universities in the world. He has published several articles in national newspapers, such as **VATangelization of Angola**, where he presents an approach to VAT made in Angola, **principles of international tax law**, and the **origin of international treaties**, articles also published in the Digital Library of the African Tax Administration Forum (ATAF).

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INTRODUCTION

This document aims to briefly present the state of electronic commerce, with great emphasis on the market of developing countries, more specifically the Angolan market, taking into account its large and rapid growth worldwide, strongly driven by globalization, the emergence of new technologies and the various advantages that it presents to its participants.

As a developing country with considerable technological infrastructure problems, and other issues, Angola is not yet in the range of countries where this sector contributes a considerable share of revenues to the economy. However, this does not imply that Angola should be considered as "light-hearted", since this sector, for example, employs a good number of citizens in many countries and, even here, we already see several companies that are engaged in *online business.*

In this way, there are many tax challenges that arise within Electronic Commerce, such as the determination of its form of taxation, in the context of income taxes, Value Added Tax (VAT) and the fiscal framework of *cloud computing*[1], challenges that must be analyzed by the General Tax Administration (AGT) to be better able in the future and so we can solve them or mitigate their effects.

1. EVOLUTION OF ELECTRONIC COMMERCE

When we speak of the evolution of the E-Commerce does not, we cannot, of course, to decouple the evolution of *the internet*[2], the origins of this date back to the mid-fifties of the last century, when, in the United States of America, the *Advanced Research Projects Agency (ARPA)* was created, which is responsible for the development of a system for communication between computers, as well as to do their share for educational institutions, and, in 1971, this is the same group that has had its name changed to the *Defense Advanced Research Projects Agency (DARPA)*.

In 1969, ARPANET was created with the aim of connecting US military bases and research departments, and in 1973/1974, the term internet was first used by Vinton Cerf, Yogen Dalal and Carl Sunshine at Stanford University in the United States of America (USA).

Years later, in 1985, the *National Science Foundation Network* was created, consisting of a set of interconnected universities, and in 1992 Tim Berners Lee, English, created the *World Wide Web* (www)[3], allowing, two years later, the NetMarket website to perform the first online sale of a product[4].

In addition to this the evolution of the internet and E-Commerce, one cannot help but make a reference

1 The latter can be defined as the use of the storage and calculation capabilities of computers and servers connected to the internet. All information from the consumer, third parties and the provider is put online as soon as possible, where there is no material feature of the operations, causing immense difficulties, since it is difficult to determine the identity of the users and consequently this affects the collection of revenue.

2 The internet is a global system of interconnected computer networks that uses the Internet protocol suite (TCP/IP) to communicate. It consists of private, public, academic, business, and government networks of local to global scope. (wikipedia)

3 System in which documents are interconnected and run on the internet.

4 The product purchased was the album "Ten Summoners Tales" by the English musician Sting, which cost about USD 12, and the buyer paid with his credit card. Despite this sale, the great boost given to e-commerce occurred with Amazon Books, which started its online sales in 1994/1995.

to the Project on BEPS (*Base Erosion and Profit Shifting*), the Organization for Economic Cooperation and Development (OECD) in July 2013, has prepared a report entitled *Adressing the Basis of Erosion and Profit Shifting*, the final version of which was released in the year 2015[5] and identified 15 action plans, the first action is related to the challenges of taxation in the digital economy, and where they take place, the conclusions and recommendations on this topic.

2. CONCEPT AND CHARACTERISATION OF ELECTRONIC COMMERCE

In the definition of electronic commerce, there is, as we will see below, a common denominator that is the practice of a commercial activity over the internet and where a series of data from the actors are transmitted.

The OECD[6] defines it as the sale of goods and services from a computer network using specific, purposeful methods designed to receive and place orders. Goods and services are ordered using this method, however, payment and delivery need not necessarily to take place *online*. E-commerce can thus be between businesses, households, individuals, governments and other public and private organizations.

For its part, the U.S. Department of the Treasury defines it as the ability to perform commercial operations, transacting any type of goods or services between two or more subjects located in the same or in different jurisdictions, using, for this purpose, terminals that allow access and intervention on the *Internet*.

Luiz Lopreato defines it as "*a concept that describes the process of buying, selling and exchanging products, services and information via computer network, including the internet, and may also include the provision of customer services, collaboration between business partners and the conduct of electronic transactions within the organization. Transactions can be made between companies or business-to-business (B2B) and between companies and consumers or business-to-consumer (B2C)*"[7].

For the part of the european E-Commerce is based on the so-called information services, which are seen in the "community benefit", as with any service that is provided at a distance, by electronic means, in the context of an economic activity, at the request of the individual to the recipient (with the exclusion of sound broadcasting or television)[8], and in this way, Rita Calçada Pires[9] believes that e-commerce should be defined as a new way of doing business, trading based on the virtual networks of demand and supply.

Therefore, in general terms, electronic commerce can be defined as any transaction carried out electronically or using the internet and involving individuals or legal entities.

3. TYPES

Electronic commerce can be divided into (i) indirect or "*offline*" which refers to the sale of physical goods, by electronic means, and where there is the physical

5 BEPS 2015 Final Reports.

6 Addressing the tax challenges of the digital economy, OECD (Action 1: 2015 Final Report), p. 55, paragraph 117.

7 LOPREATO, Francisco Luiz C., Taxação do Comércio Eletrónico (2002), text for discussion. IE/UNICAMP No. 108, Apr. 2002, pp 2.

8 PEREIRA, Alexandre Dias, e-commerce (studies), publication of the Faculty of Law of the University of Coimbra (2017), pp. 3.

9 PIRES, Rita Calçada, Manual de Direito Internacional Fiscal, Almedina, 2018, p.302

delivery of goods to customers through traditional channels and (ii) direct or "*online*" which represents those transactions carried out entirely on the network or on the internet. in these cases, in addition to the order made by electronic means, the delivery of the product or service is carried out over the network, by virtual distribution channels, since the good or service can take the digital format. The most frequent forms of these "*online*" transactions are the *downloading* of *software*, the electronic transmission of music, newspapers and etc.[10]

4. CLASSIFICATION ACCORDING TO THE PARTIES INVOLVED

In determining electronic commerce, it is equally important to define it according to the parties involved. Thus, this includes:

a) *Business to Administration (B2A)*: *online* transactions between companies and the public administration, and in this type the administration uses the internet to purchase goods put up for sale by a company;

b) *Business to Business (B2B)*: The transactions take place between two companies;

c) *Business to Consumer (B2C)*: The transactions take place between businesses and consumers. In this type, the companies present themselves as those that sell products and provide services. As an example we can present those companies that, in addition to physical facilities, also have *web pages* where they make sales;

d) *Consumer to Business (C2B)*: in this, the individual trader sells to a company;

e) *Consumer to Consumer (C2C)*: trade occurs between two individuals. That is, consumer sells to another consumer.

5. ADVANTAGES

The rapid growth of this type of Business worldwide is driven mainly by the advantages it brings, namely (i) easy communication, (ii) reduction or elimination of costs, (iii) elimination of physical borders, (vi) absence of intermediaries, (v) speed in the search for products made available, (vi) internationalization of products put up for sale or services provided and (vii) The fact that it is a sector that already employs a considerable number of people.

As a result of their enormous advantages, several companies are successful in this field, such as Amazon and Ebay, whose main success factors are the fact that they focus on the consumer, the large number of products they market, creativity and the possibility of the consumer getting feedback on the pages.

6. DISADVANTAGES

In addition to the obvious advantages of this type of trade, I also highlight some disadvantages that make necessary for states to look at this sector with greater interest and acuity, namely (i) the ease of tax evasion, since, for example, it is often not easy to know what a company has obtained from revenues from this segment and (ii) the lack of sufficient and effective regulation to "attack" Electronic Commerce.

In addition to these disadvantages, companies that decide to start their participation in this type of business must be technologically prepared for the constant

10 Gattass, Juliana Borges Assumpção, a Tributação no Comercio e-electronic, Revista do Instituto do Derecho Brasileiro, Year 3 (2014), n.º 1, pp 140.

updates in the IT sector. So, in addition to the successful cases (and many are these cases) there were also cases of total failure, as it happened with the English company "eToys.com" which declared bankruptcy, only 4 years after it was inaugurated (1997-2001). High operating costs and the fact that the company sold much more than it had in stock contributed to the company's poor image and subsequently to its bankruptcy.

7. PRINCIPLES OF ELECTRONIC COMMERCE[11]

In the e-commerce field, several principles are listed and should be followed, such as:

a) Neutrality principle: the taxation in this sector should not cause taxpayers to change their behavior. Thus, there can be no differential treatment between the taxation of Electronic Commerce and the taxation of business or conventional commerce;

b) Subsidiarity principle or residual state intervention: excessive regulation should be avoided and, consequently, we should allow a rapid growth of this business;

c) The principle of the prevalence of the substance over the form: for tax purposes it is the material content of the business that counts, and not the denomination assigned to it by the parties;

d) The principle of certainty and simplicity: tax rules should be clear and simple in order to enable the taxpayer to understand their effects and,

f) The principle of efficiency and fairness: taxation must be adjusted to reality, while there is a need to minimize tax fraud.

8. AMOUNTS INVOLVED IN E-COMMERCE (LARGEST MARKETS)

According to data obtained from sites such as shopify and mobilemediainfotech, China is the largest market in this segment of the economy. In 2018, it moved approximately 672 billion US dollars (USD) and is a country where close to 50 million people develop business using digital platforms.

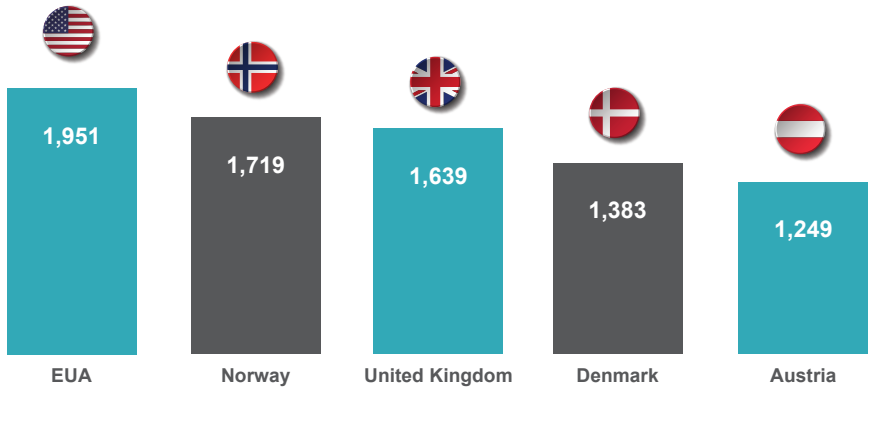
As a sector of the economy that employs a considerable number of people, the Chinese authorities still have a rather residual intervention, and only recently (2018), the law on Digital Commerce was passed.

As we can see, in the graphs below, there are several variables analyzed in the studies on e-commerce, such as expenditure per person, the markets with the highest revenues and the number of buyers, which demonstrate the great dynamics of this sector.

In Graph 1, we find that the United States of America (USA) is the country where citizens spend the most on *online* shopping and, according to data provided by Eshopworld, in 2018, 79% of the North American population relied on online shopping and did online shopping. That is, about 260 million Americans.

11 See OECD recommendations at the Inter-Ministerial Conference under the theme " A Bordeless World. Realising the Potential of electronic Commerce " held in Ottawa, Canada, on October 08, 1998.

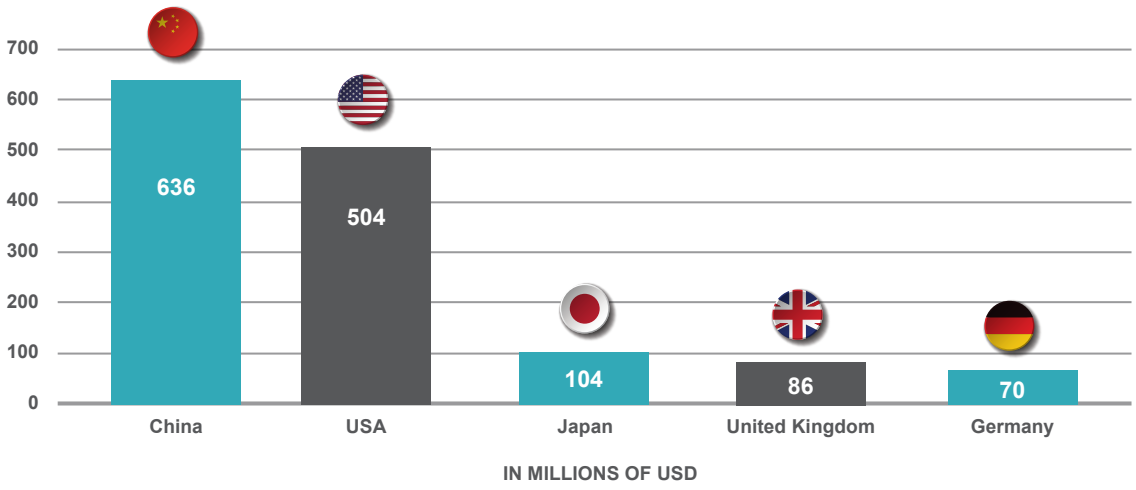
Graph 1. Largest spending markets per user / year



Source: *ranking prepared by eShopWorld (Global ECommerce market Ranking - 2019, released November 2018)*

On the other hand, graph 2 represents the market with the highest revenues from the online business and which, unsurprisingly, turns out to be the Chinese one, taking into account the size of this market, the population density, the number of companies engaged in this sector and the high number of Chinese and also foreign factories that exist in this market. China, in 2018, saw its revenues from Electronic Commerce reach 639 Million US Dollars (USD), against 504 Million USD in the US.

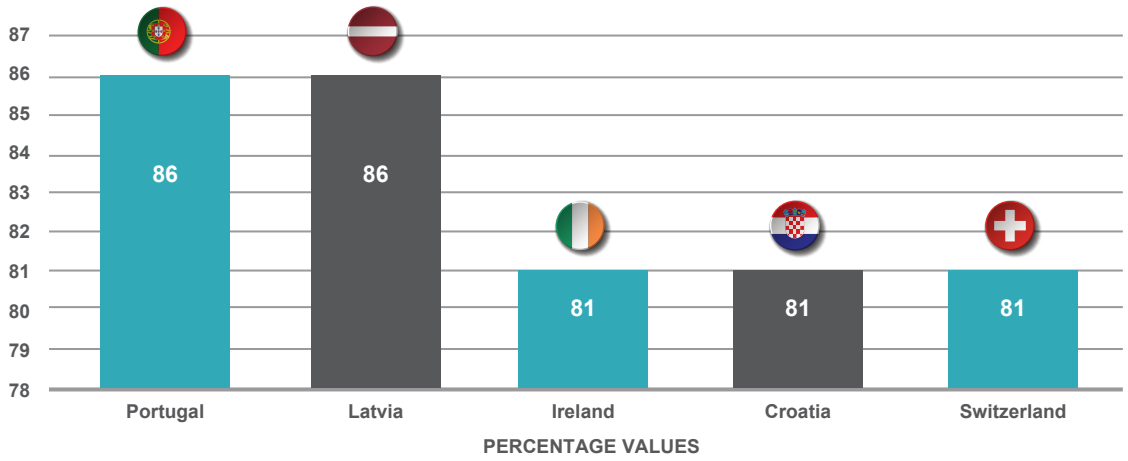
Graph 2. Markets with highest revenues from e-commerce



Source: *Ranking prepared by eShopWorld (Global ECommerce market Ranking - 2019, released November 2018)*

Another interesting variable (in some way), even if merely for educational purposes, concerns cross-border e-commerce as a percentage (%) of *online* spending, and here the highlight goes to Portugal, where 86% of *online* purchases are made on foreign sites. It should also be noted that Portugal is in 30th place in the overall ranking analysis.

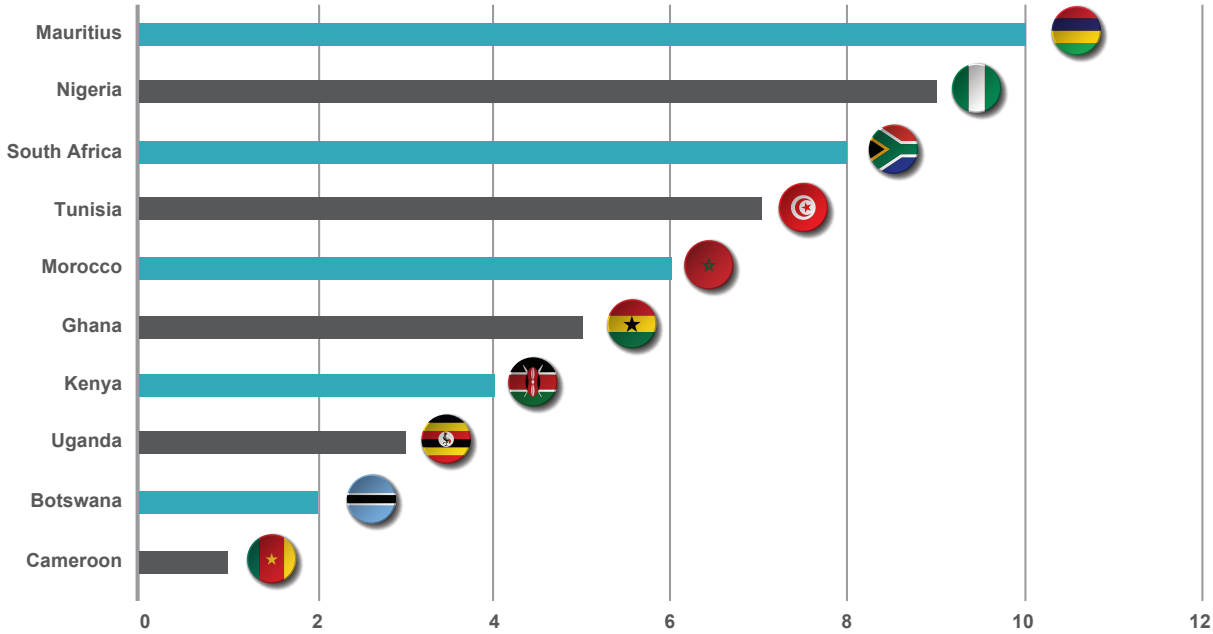
Graph 3. Markets with more cross-border spending



Source: *Ranking prepared by eShopWorld (Global ECommerce market Ranking - 2019, released November 2018)*

For Africa, in the ranking prepared by the United Nations Conference on Trade and Development (UNCTAD), Mauritius is the country best prepared for online shopping (B2C). It should also be stressed that South Africa, Egypt and Nigeria are among the countries where the most users shop online and also have high growth rates[12]. Angola, with 30.4 points out of 100 possible, occupies the place 123 (2019) which represents an increase of eight (8) places compared to 2018. In this ranking are also evaluated several variables, such as the percentage of internet users, percentage of holders of an email account and the security of servers in terms of revenue.

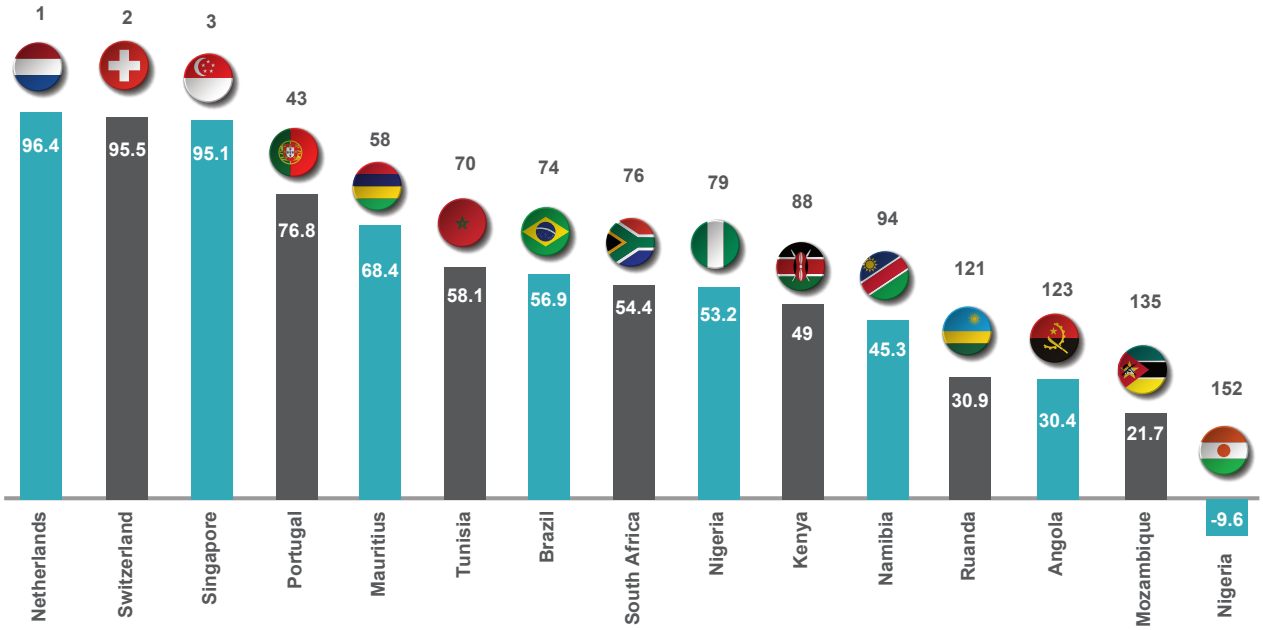
Graph 4 - Ranking of the top 10 markets in Africa in B2C e-commerce



Source: *UNCTAD B2C E-Commerce Index 2019*

12 https://www.prnewswire.com/news-releases/the-2019-b2c-Comércioelectronic-market-in-africa-2019-rapid-b2c-e-commerce-sales-growth-projected-for-2020-300884893.html

Graph 5 - UNCTAD's overall Ranking of the largest B2C trade markets in Africa



Source: *UNCTAD B2C E-Commerce Index 2019*

9. E-COMMERCE AND TAXES

1. E-commerce and Value Added Tax (VAT)

VAT is, as we know, a general consumption tax (It taxes the transfers of goods, the provision of services and imports), multi-phase (it covers all stages of the economic cycle), without cumulative effects (each operator must calculate the sales price tax, then deduct the amount of tax that has been levied on the respective inputs, known as the right to deduct) and tends to be neutral, since, in principle, it does not influence production processes or final consumption.

In addition to the above, VAT discourages tax fraud and evasion, as its weight is diluted by a greater number of economic operators who control each other through invoices.

With regard to the determination of electronic commerce as a transmission of goods or provision of services, for VAT purposes, it is elementary, first, to distinguish the location rules applicable to these two situations:

a) Thus, with regard to the location of transfers of goods, two very important principles are used which cannot be applied simultaneously, namely the principle of taxation in the country of destination and the principle of taxation in the country of origin. Under the principle of destination, VAT is levied in the country in which the good is consumed, i.e. the power to tax lies with the country of destination, and the country of origin ensures that its exports leave without VAT being applied to them. In turn, on the principle of origin, VAT is levied in the country where the value added is produced, i.e. the power to tax lies with the country of origin and, therefore, exports are subject to taxation and imports are exempt from taxation;

b) For the supply of services, (i) if the recipient is a business (taxable subject), as a general rule the law of the country where that business is registered or where it has the permanent establishment receiving the service applies. On the other hand, if the recipient is a consumer (non-taxable person) the law of the country where the recipient has

his habitual residence or permanent residence applies;

The Commission of the European Communities[13] takes the view that the purchase of goods where the order is made over the Internet and there is a physical delivery of the goods, for example by post, and maintaining their tangible nature is, for VAT purposes, regarded as a transfer of goods. In turn, a transaction carried out over the internet, in which a file is then transferred, or a product downloaded, should qualify for VAT purposes as a supply of services.

However, while in transfers of goods, because they do not lose their tangible characteristics, the authorities are in some way able to control the circuit of a good, either by the information obtained from Customs, at the time of entry of the product, or by requesting proof of the sale of the products at the time of the inspection measures or any other action taken. In the provision of services, at least in the Angolan case, since the market in this segment of the economy is characterized by imports rather than exports, it becomes extremely complex to determine, ascertain and also monitor this type of business and what income companies and individuals obtain from it without joint action involving the various economic agents, including individuals, since they must be willing to collaborate with the tax authorities.

Having said that, it is also necessary to define the provision of electronic services as that which does not represent the physical delivery of a good and which has a very small human intervention. In this case, we may be referring to the download of programs and their updates, an email consultancy, online training, the sale of tickets for football games or for music shows using the electronic platforms, the maintenance of websites and even internet service packages.

Several countries, especially the developed ones, mainly European are both importers and exporters of this type of service. To reduce the negative impact that this type of business has on states' revenues, as well as aiming to reduce court cases brought by individuals, mainly for interpretative reasons, they have decided, by *consensus omnium*, to include in their VAT codes provisions listing for example, what they consider as E-Commerce, such as broadcasting and downloading videos, films and music, games of chance, website maintenance services, Internet service providers, online data storage, advertising banners, downloading any software, e-books, subscribing to online magazines and newspapers, subscribing to memberships in clubs via the Internet and distance learning[14]. This trend is already "spreading" even to developing countries (South Africa and Kenya are examples of African countries that have provisions related to Electronic Commerce in their VAT codes).

2. E-commerce and income taxes

In the same way as transactions carried out with the use of Electronic Commerce must be taxed, the income that individuals and companies derive from the use of Electronic Commerce must also be taxed in the context of income taxes. However, the problems that arise, or at least some of them, relate to the fact that how the Tax Office will know whether or not a particular income comes from Electronic Commerce and what treatment it should give to it.

13 Electronic commerce and indirect taxation, communication from the Commission to the Council, the European Parliament and the economic and Social Committee, COM (1998) 374 final.

14 The United States of America and the people's Republic of China do not tax internet-based commerce for VAT or similar purposes, but only for business income tax purposes, since it is still a concern of these countries not to interfere in the development of this sector. In spite of this, the fact that some countries do not tax this type of trade through consumption taxes may run counter to fundamental principles of tax law such as equality and ability to pay.

As can be seen in the publication of Aderito Vaz[15]:

"The first difficulty to solve is how to qualify the income obtained from the sale of products via Internet. Assuming that the purchase of a book on internet from the page that a bookstore has on Internet, waiting for its delivery at home, the profit that the bookstore will earn is usually taxed as income derived from a commercial activity. If you are selling the right to have the customer download the contents of the book to his computer or authorize him to download software, the income you will get can theoretically be of three types, namely an industrial property income (royalties) with an obligation to retain at source, a normal commercial income or income derived from the provision of services and in this case also subject to withholding tax."

For this reason and, in line with the understanding of much of the doctrine, I share the opinion described above, and it seems that the final determination of the taxation should consider the purpose of "business".

3. Electronic commerce in Angola

Although Angola does not yet represent a market of great importance to E-Commerce, world-wide, the truth is that we have found that this is a market that has grown up with, but quite a few of the companies dedicated to this business, such as the Baiqi, Baobabay E-Soba, MeuMerkado, Otchitanda, Stekergo and Tupuca, in addition to the more well-known TAAG - linhas Aéreas de Angola, and the NCR, and the last two are not dedicated exclusively to E-Commerce.

These companies (with the exception of the last two), in total, have made tax payments of about 15-20 million Kwanzas, which corresponds to about 25/35 thousand units which, as we can see, is a ridiculous amount when compared to the markets such as South Africa, Nigeria or the Maghreb countries.

In legal terms, although we have several documents that can be referenced for the purposes of electronic commerce, such as the Constitution of the Republic of Angola (2010), which enshrines in Article 38 (3), the right to freedom of economic initiative and of the Law no. 15/03 of July 22, laying down the general principles of the policy on the protection of consumers, the fact remains that our legal system is lacking documents dealing directly with this topic, perhaps because we just consider it as a minor issue, or because it is believed that the law in force may answer the issues that can arise, or because we feel that it is a sector, which is quite complex, and it does not deserve, at least for the moment the creation of a specific regulations to govern it. However, the fact that we do not have specific legislation on electronic commerce may be a disadvantage for the tax authorities, as it may lead to attempts at fraud and tax evasion.

Even so, it was possible for me to discover that, besides having a Code of Commercial Activities (CAE) for Electronic Commerce, namely 47910[16], Law no. 01/07, of 14 May (Law on Commercial Activities), speaks of Electronic Commerce, defining it as a form of distance commerce, carried out mainly by computer means (Section 11, article 4). However, this same law seems ambiguous to me because it does not consider this type of commerce as a commercial activity (Article 11) but, and only, as a form of sale (Article 13).

For its part, the Angolan VAT Code (CIVA) does not deal with this issue exhaustively either, since only in two articles does it refer to digital issues, namely Article 12(1)(d), which states that the transmission of books, including in digital format, are exempt from the tax, and Article 50(4) of the VAT Code Article 50(4) which establishes the joint liability between suppliers and intermediaries for the payment of tax, including digital platforms, which are taxable persons, where the TA provides evidence

15 PINTO, Adério Vaz, a Tributação do Comercio e-commerce, Boletim de Ciências Economicas da Faculdade de Direito da Universidade de Coimbra, volume XLV, 2002.

16 Classification of economic activities in Angola-revision 2 (CAE-vers. 2)

that the intermediary was or should have been aware that tax evasion or avoidance was being committed in relation to the transaction in question.

However, several questions can be raised here, such as (i) what transactions would we be talking about since we do not have a list of what we consider to be electronic commerce for VAT purposes, (ii) what means does the tax administration have to monitor transactions carried out electronically and (iii) How would the control of transactions carried out electronically take place?

Although it is understandable that we do not deal with e-commerce in the VAT Code, given the fact that we want to establish a simple VAT and that it is a problematic issue even in countries with another level of technological development, the truth is that, out of respect for the principles of tax law, the issues linked to it, as well as the revenue it generates, cannot be treated lightly, given that its non-taxation will benefit the individuals with the highest income, since it is they who, as a rule, have access to the goods made available on the various online platforms.

What are the solutions? There are several challenges in this taxation, the main ones being the human, legal and technological aspects. So, just as in other parts of the world, this issue has not been resolved, in Angola either, we do not have the magic wand that will explain how best to tax e-commerce without, for example, reducing its use, without reducing the jobs it generates and so on. However, as recommended by international institutions or organizations, it is necessary to find solutions and these solutions pass, and here going more to the technical aspects, by studying the various alternatives presented by these institutions or international organizations, such as the information coming from the credit card (bank), the IP address (*Internet Protocol*) and the amount of bits used on the internet (*bit tax*).

None of these ultimately solve the taxation of e-commerce but they can be good starting points. Take, for example, the case of Nigeria[17], one of the largest markets in Africa, if not the largest, which intends to apply a 5% VAT rate on online transactions, and in this process, banks will be the agents who will withhold VAT on purchases, since bank cards are used. Despite the possible effects of this taxation, namely the disincentive to the use of online shopping, as well as the reduction in revenues of Nigerian startups or companies engaged in this type of business, local authorities believe that this taxation can increase the tax revenues, in a country that annually has circulating, on average, 15 billion USD with e-commerce.

17 https://www.avalara.com/vatlive/en/vat-news/nigeria-5--withholding-vat-on-e-commerce-2020.html

10. CONCLUSIONS

Having said this, it is recommended that in Angola, state institutions, namely the National Bank of Angola, the Ministry of Industry and Commerce, the Ministry of Telecommunications and Information Technology, the Ministry of Finance, as well as society in general, work together to create a legal framework that does not discourage this type of business but also ensures that the state collects revenues from it.

On the other hand, it also seems appropriate that the VAT code should contain provisions relating to electronic commerce, more specifically, an illustrative list of what is considered electronic commerce in the Angolan reality, as well as its definition for VAT purposes, since this may help to reduce the number of disputes in court related mainly to questions of interpretation of the law.

On the other hand, in developing countries, more importers than exporters of this type of services, as is the case in Angola, cooperation, conventions, participation in international seminars that allow to exchange experiences with countries that are at a more advanced stage can help in the search for the best ways to tax this type of business.

PERMANENT COMMITTEE ON CADASTRE IN IBEROAMERICA:

Cooperation in the Service of Real Estate Taxation and Sustainable Development

Tomás **Moreno Bueno**

SYNOPSIS

Today cooperation emerges as an indispensable tool for better public governance in an environment dominated by globalization and the acceleration of change. The Permanent Committee on Cadastre in Ibero-America works with this approach, an organization established in 2006 that aspires to strengthen cadastral activity in the countries of the region, and that since November 2019, under the Spanish presidency and based on the conclusions of the XII Symposium on the Cadastre in Ibero-America, held at that time, seeks to strengthen inter-administrative cooperation as the foundation of a sustainable cadastre, capable of contributing effectively and efficiently to the fiscal policies of all kinds that this real estate census serves.

CONTENT

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INTRODUCTION

The volatility of the scenarios in which socio-economic activity unfolds and the complex web of interactions between its players imposes increasingly demanding government policies and administrative practices.

In this context, the pandemic caused by COVID-19 has reminded us that multilateralism and international cooperation are essential for globalization to bear its best results, which means that any public organization must today transcend its natural environment to interact with those others that facilitate the design and development of new management models, especially those whose scope of competence is common practice in the international community and, consequently, offers a broad spectrum of reference.

This is the case of the Real Estate Cadastre, an essential data infrastructure for the definition and execution of tax policies and of all those that require an official description of land property in its physical, legal and economic aspects, which today presents a different maturity in each country as a result of the various implementation situations and their different consideration in the political agenda.

In any case, the undeniable functional relevance of the Real Estate Cadastre, the growing consolidation of a changing context of action and the diversity of degrees of development, have strengthened the interest in international cooperation in this field, which has received a definite boost in the Ibero-American context by the calling of understanding that characterizes our sister countries.

This paper aims to offer a necessarily general overview of the cooperation between cadastral institutions within the Permanent Committee on Cadastre in Ibero-America and to report on the projects created from the last symposium supported by the organization, which took place in the Spanish city of Granada between November 12 and 14, 2019, and of its last general assembly, held in the city of Madrid the day after the Granada meeting concluded.

Before, and with an openly informative purpose, a section is introduced to describe the nature and functions of the Real Estate Cadastre as a general inventory of properties that allows one to know and manage one of the main socioeconomic assets of any country: its real estate.

All this from an approach that underlines collaboration as an instrument for the sharing of best practices, but also to fulfill the mission of the cadastral institutions, condensed in guaranteeing the continuous updating of this inventory and its greater availability for the performance of other public policies and private initiatives.

In such a way that cooperation between cadastral organizations must be understood today as a first-level instrumental collaboration for the sharing of experiences at the service of a second-tier inter-administrative, intense and systematic collaboration, among all those public entities that intervene in the material and legal transformation of the nation.

Only in this way, from the cooperation between all those competent public actors in the authorization or management of real estate modifications is it possible that the cadastral institutions offer at all times a faithful reflection of the real estate reality, deploy all their capacities and establish themselves as effective organizations.

For all this, nothing better than to remember the paradigm under which the XII Symposium on Cadastre in Ibero-America was conducted, and which may well extend this work: *effective cooperation and sustainable cadastre*.

1. THE REAL ESTATE CADASTRE

The Real Estate Cadastre is an administrative registry in which all properties are described by identifying their most characteristic attributes (location, surface area, use, quality, age, owner or value) based on their graphic representation on a continuous parcel mapping, where each property is assigned a unique official identifier, which in each country responds to a different denomination, generally a cadastral code or reference.

This identifier, similar to the one assigned to each citizen in his identity card or official identification document, must appear associated in any public or private document to the asset to which it corresponds, which ensures the traceability of the modification or transfer processes. We must not forget that incorporated in an information system, the identifier facilitates the crossing of information or the association between different databases for the creation of added value.

The Real Estate Cadastre is characterized by its public nature, by the official nature of the information managed, enjoying a presumption of certainty, and by the objective and subjective generality of its scope; In other words, it covers all properties in its jurisdiction and applies to a wide range of uses.

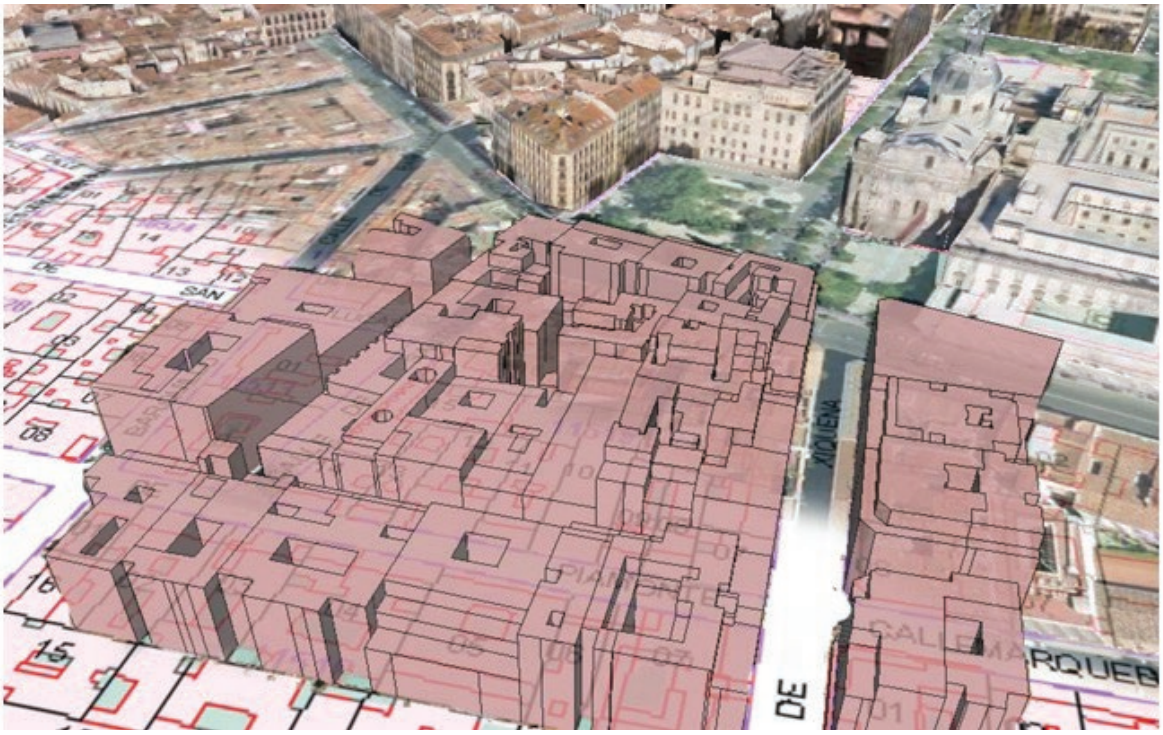
Its public nature also confers additional obligations of transparency, data protection and accountability, which are added to the main evaluation criteria used to audit the suitability of the management models and which allow certifying the excellence of cadastral organizations from an operational approach according to the degree of compliance with three reference thresholds:

a) Exhaust the registration capacity so that the Real Estate Cadastre is effective and always aligns with the real estate reality.

b) Take advantage of all the process capacity, to make the most efficient use of resources.

c) Develop maximum service capacity through a continuous deployment of services that guarantees the highest user satisfaction as an indicator of quality.

Cadastral parcel sample



The cadastre models and represent the real state reality

In short, the Real Estate Cadastre constitutes a representation of the property structure of a country and currently stands as a tool for territorial structuring and social cohesion; also a census that must have registered all the assets in its field of management, updated in all its characteristics and available to satisfy the needs of those who demand information about them.

From that functional and service point of view, it emerges as an inventory of high capacities for socioeconomic development since its services delve into the welfare state to which the Government action is focused.

Today, cadastral information serves a multiplicity of purposes that are still led by its genuine tax calling. Under this premise, it can be said that the Real Estate Cadastre provides today a host of services that, supported by its fiscal side, offers the most solid institutional stability to deploy the greatest effectiveness in the application of all its other purposes, as defined in the set of services essential for which it is employed:

1. Real estate taxation

The cadastral information is used to determine the tax bases of taxable events both for the possession of real estate and for its exploitation or transfer and is presented every day as an essential instrument in the fight against fraud.

Similarly, the data contained in the Real Estate Cadastre allow for allocating this tax obligation to the corresponding taxpayers and even serve as a basis for the definition and selection of taxpayer profiles and behavior patterns or to quantify the economic capacity of those who must pay other obligations to the Public Treasury in the process of collection.

2. Protection of rights

Of a passive nature concerning the securing of property by virtue of the presumption of certainty about the cadastral data, which obliges to prove their legality by whoever intends to make any modification; which means that, for example, the Real Estate Cadastre plays a decisive role in the custody of depopulated territories.

Active in nature in that it fully identifies the property and its characteristics in its transfer by expropriation, sale, donation, or succession, in its modification by division or grouping.

With regard to the environment and the fight against climate change, the Real Estate Cadastre plays a more relevant role every day both in the delimitation of sensitive areas and in the prevention of forest fires, disaster management and repopulation actions, as well as in the attribution of energy efficiency in buildings.

It also has an impact on the protection of people both by its contribution to the active management of natural disasters and by its contribution in risk assessment or in the establishment of action plans.

3. Performance of public policies

In this matter, the Real Estate Cadastre allows the identification and evaluation of wealth for the exercise of numerous public policies: from the allocation of resources for access to free justice to the management of aid for which limits are set on the beneficiary's economic capacity, including those for education or social services.

And of course, cadastral information plays an important role in the planning and management of actions to transform the territory, both regarding energy or transport infrastructures and urban policy or the processes of land consolidation or productive intensification in agriculture or livestock.

4. Strengthening the transparency and efficiency of real estate markets

In this growing field of application, the Real Estate Cadastre contributes to the improvement of the markets by providing information-seekers and information-suppliers with official and similar information about the material scope and characteristics of each property, as well as by reducing transaction costs and facilitating legal obligations in real estate sale transactions.

5. Geolocation

In a global information society, where spatial location is an appreciated value in professional or leisure activities, the Real Estate Cadastre occupies an increasingly relevant position as an official platform on which to locate any property information, in the same way that it allows to be the common support where layers of different information can converge for their integrated analysis and the preparation of studies aimed at improving processes.

This wide range of applications outlines a Real Estate Cadastre unequivocally oriented towards socioeconomic development and, even more, towards the consolidation of citizen identity, since it has obligations and services alike. If on the obligations side, the cadastral institution requires the taxpayer to continually update data and on the basis of that information requires compliance with tax obligations, it is no less true that the services it offers allow the securing of the property or the real estate modification in the broadest sense of the term. In other words, the Real Estate Cadastre deploys its activities according to a circular path of duties and rights forging citizenship, as it consolidates the obligations to the community while creating awareness of what the individual should receive from it in return. It thus contributes to increasing the social legitimacy of the Public Administration, one of the pillars of better governance in the most advanced societies.

We must always bear in mind that real estate taxation is the origin of the cadastral institution and that this new technological and social juncture allows a new impetus to be given to an activity that is at the very inception of taxation since ancient times and, consequently, to the own emergence of states as entities where the social nature of the human being is institutionalized.

Thus, it should be remembered that the tax on real estate has been a constant in the history of taxation for two basic reasons: it constitutes an obvious demonstration of economic capacity and has a greater ease of control by the Administration than the perception of income or transactions of personal property or consumer products, which require greater efforts to avoid their concealment.

This new boost to cadastral activity we are witnessing today comes from the technological revolution and the progressive consolidation of an administrative consciousness that bets on cooperation as a management instrument. It happens throughout the world, although in Spain and within the scope of its Directorate General for Cadastre, which covers 96% of the country, technology and collaboration go hand in hand since it was established almost thirty years to develop a cooperative management model that is more effective, efficient and high-quality every day.

It is a management model that includes almost 78 million properties, where Spain's Directorate General for Cadastre assumes a central role of regulation and supervision of a highly collaborative system and of managing a single database. In it participate to incorporate or extract information about 13,500 public institutions including municipalities, provincial administrations, notaries, or property registries, where more than 67,000 users are enabled to perform these tasks.

A shared management model that is arranged in accordance with the basic collaboration obligations imposed by the current regulatory framework and almost one thousand collaboration agreements signed with many other public organizations to expand the performance of cadastral functions attributed to the Directorate General for Cadastre.

Thanks to this concerted performance system, it is possible to ensure the continuous updating of cadastral information and guarantee the financial sufficiency of the different Public Administrations, both through recurring and nonrecurring taxes. The recurring taxes include the property tax as in any other country. In Spain it is called Real Estate Tax and nets the government about 13,500 million euros in annual collection, namely almost two-thirds of tax income collected in Spanish city councils.

Under this intense cooperative model, a network of almost 3,800 Cadastral Information Points (PIC) operates throughout country, in what constitutes the most extensive network of face-to-face public services in the country. It operates thanks to that willingness that is shared by the different Public Administrations and that allows any city council to offer this information service run by municipal officials who are accredited by Spain's Directorate General for Cadastre.

The PIC network facilitates the universalization of citizen services so that they, in their own city council, can access cadastral services as long as they do not have access to the Directorate General for Cadastre electronic office. There, a host of services are offered to the population, given that not all service requestors have the necessary functional or technological capabilities.

2. PERMANENT COMMITTEE ON THE CATASTRE IN IBERO-AMERICA (CPCI)

Inspired by that same spirit of cooperation inherent to the management of the Real Estate Cadastre and as a result of the informal collaboration developed until then, the Permanent Committee on the Cadastre in Ibero-America (CPCI) was established in the Colombian city of Cartagena de Indias on May 12 of the year. 2006, after the signing of the so-called *Declaration of the Land*

Registry in Latin America, signed by the following 20 representatives of 19 land registry institutions in the region, belonging to 14 countries. With this document they created the charter of the organization:

- Horacio Francisco Mazzaferro, General Director of the La Pampa Cadastre and representative of the Federal Cadastre Council (Argentina)
- Roxana Carelli, Provincial Director of the Territorial Cadastre of the Province of Buenos Aires (Argentina)
- Alberto Alfredo Oliver, surveyor of the Córdoba Land Registry Office (Argentina)
- Carlos Flores, Director of Cadastre and Sanitation of the National Institute of Agrarian Reform (Bolivia)
- Elizabeth Prescott Ferraz, Coordinator of Rural Cadastre of the Directorate of Agrarian Structure Organization under the National Institute of Settlement and Agrarian Reform (Brazil)
- Carlos Orrego Acuña, Head of the Cadastre Department of the Internal Revenue Service (Chile)
- Ivan Darío Gómez Guzmán, Director of the Agustín Codazzi Geographic Institute (Colombia)
- Hernando Maldonado Pachón, Director of the Administrative Department of the Bogota District Cadastre (Colombia)
- Jorge Avendaño Machado, Director of the National Cadastre (Costa Rica)
- David Cedeño Ruperti, Director of Appraisals, Cadastre and Records of the Municipality of Manta (Ecuador)
- Jesús Miranda Hita, General Director of the Land Registry (Spain)
- Roberto Quiñonez López, Nonvoting Member of the Board of Directors of the Registry of Cadastral Information (Guatemala)
- Angélica Donis Arredondo, General Director of Real Estate Cadastre and Appraisal of the Ministry of Public Finance (Guatemala)
- Victor Arturo Valenzuela Morales, Nonvoting Member of the Board of Directors of the Registry of Cadastral Information (Guatemala)
- Humberto Morones Hernández, Director of the Land Registry of the Guadalajara City Council (Mexico)
- Edgar Aguilera, Deputy Director General of Legal Advice under the Directorate of Cadastre and National Assets (Panama)
- Luz María del Pilar Freitas Alvarado, National Superintendent of the National Superintendence of Public Records (Peru)
- Jaime Portuguez Arias, Executive Director of the Special Project for Land Titling and Rural Cadastre (Peru)
- Armenio dos Santos Castanheira, President of the Portuguese Geographical Institute (Portugal)
- Carlos Ortiz Calderón, Technical Deputy Director of the General Directorate of the National Cadastre (Dominican Republic)

As an observer, August Hochwartner, then President of the Permanent Committee on Cadastre in the European Union, signed the agreement.

The declaration proclaims the basic principles of the Real Estate Cadastre, which is considered a necessary public actor to favor development, the improvement of the quality of life of citizens and the social strengthening of the Ibero-American countries. It also identifies cadastral institutions as organizations that must ensure equality, security, and justice for all Ibero-American citizens, for which they are passionately committed to cooperation that guarantees the best description of the properties.

The Declaration makes references to cadastral information, which must be safeguarded with the legal reserves of each country, as well as the coordination with the Property Registries, in a task of strengthening legal security where notaries also play a prominent role.

The CPCI is configured as a partnership without legal status or permanent secretariat, whose functions are temporarily exercised by the country that holds the presidency. It includes public cadastral institutions in Ibero-America that decide to form a partnership. In some countries these are national organizations; in others, such as those with a federal structure, they involve state-level entities; and in some they are municipal institutions since the land registry powers are exercised by each municipality.

As an example of national institutions, those of countries such as Panama, Paraguay or Peru can be highlighted; at the province or state level, those in Mexico or Argentina can be cited; and as examples of municipal-level entities we have urban cadastre offices in Brazil and Ecuador.

It should also be noted that the wide diversity of the scope of competence of each institution also involves its different administrative nature, both in terms of its legal status and the mission entrusted by its governing regulations.

Thus, although they share a tax purpose commensurate with the very essence of the cadastral institution, some of the partner organizations are especially inclined towards the securing of real estate and others have a purely cartographic profile.

Additionally, the committee has entities that are integrated into its work as observers, either because they are organizations that territorially exceed the Ibero-American scope or because their functions are not limited to the direct provision of cadastral services.

Among the former, reference may be made of Korea Land and Geospatial Informatix Corporation or the Dutch Kadaster, and among the latter, the Inter-American Center for Tax Administrations itself, the Institute of Fiscal Studies of Spain or the also Spanish University of Jaén.

Currently, the CPCI is made up of 78 full members and 14 observer entities. These 92 organizations represent international entities, the Commonwealth of Puerto Rico and 22 countries: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, El Salvador, Spain, Guatemala, Holland, Korea, Mexico, Nicaragua, Panama, Paraguay, Peru, Portugal, the Dominican Republic, Uruguay and Venezuela.

The scope of the Committee's actions extends to almost 21 million square kilometers and nearly 700 million people, a further incentive for the exercise of a policy of cooperation among those who are part of it. Their functional and territorial diversity provides excellent representation of all the Ibero-American cadastral organizations and fully endorses the suitability of their decisions.

The mission of the Committee established by its statutes, approved after the so-called Declaration of Cartagena, consists of the dissemination of the importance of the Cadastre in the development of countries in its sphere of activity, the link between the cadastral organizations of Ibero-America and the establishment of an information network on the Cadastre that enables the exchange of information, experiences and best practices among its members.

For this, it bets on:

- Publicizing trends and future evolution of cadastres.
- Displaying the influence that cadastral systems have on society.
- Increasing collaboration between the public and private sectors, through the promotion and use of territorial information.
- Advocating for the evolution towards electronic cadastres and the use of new technologies.
- Promoting cooperation among institutions in the construction of a future regional infrastructure for Ibero-American spatial data.
- Having an institution that acts as a cadastral practice advisor for Ibero-American countries.
- And strengthening relations between the Property Cadastre and Registry, to strengthen real estate legal security.

Organically, the Committee is governed by a general assembly that includes all its members and an executive committee with a two-year mandate made up of a President, a Vice-President and three nonvoting members who represent the three major regions of the organization: South America, Central America and Caribbean, and Europe.

The work of the organization is paid for by each of the institutions that are part of it, although in the general assembly held in Bogota on April 15, 2011, it was determined that Spain's Directorate General for Cadastre would regularly attend the executive committee meetings.

This contribution of the Spanish Directorate General for Cadastre takes form above all in training activities, support for holding meetings and management of the organization's website, renewed at the end of 2019 and accessed through the address: www.catastrolatino.org

Website of the Permanent Committee on Cadastre in Ibero-America

Each country has one vote in the general assembly and currently the steering committee has the following composition after the election carried out at the VII assembly of the organization held in Madrid on November 15, 2019.

- Presidency: Spain's Directorate General for Cadastre
- Vice-presidency: Geographical and Cadastral Institute of Quintana Roo (Mexico)
- South America Office: Agency for the Regularization of Informal Property-COFOPRI (Peru)
- Central America and the Caribbean Office: Registry of Cadastral Information (Guatemala)
- Europe Office: Provisionally, the Spanish Directorate General for Cadastre, if the General Directorate of Portugal expresses its full acceptance.

Since its creation, the chairmanship of the Committee has been held successively by the following institutions:

2007-2008: Directorate General for Cadastre (Spain)

2009-2010: Agustin Codazzi Geographical Institute (Colombia)

2011-2012: Real Estate Registry (Costa Rica)

2013-2015: Federal Land Registry Council (Argentina)

2016-2017: Directorate General for Cadastre (Uruguay)

2018-2019: National Institute of Rural Settlement and Agrarian Reform -INCRA (Brazil)

2019-2021: Directorate General for Cadastre (Spain)

In general, every year a CPCI member country organizes a symposium on the cadastre in Ibero-America and at least every two years the general assembly of the organization is held, in which, among other issues, a new executive committee and a new agency to exercise the presidency are selected.

The first assembly was held in the city of Lisbon on November 28 and 29, 2007, in a unique meeting that brought together the CPCI with the Permanent Committee on Cadastre in the European Union.

The last general assembly held is the one already mentioned, and the last symposium took place between November 12 and 14 of last year in the city of Granada. The following section of this paper is dedicated to last year's symposium.

To date, the committee's activity has taken place in the months prior to the annual symposium and the two-year assembly through the contributions from various working groups. However, after the meeting held in the Mexican city of Cancun in September 2018, a continuous line of work was started within the created strategic committee, coordinated by the National Institute of Rural Settlement and Agrarian Reform-INCRA and the Directorate General for Cadastre of Spain, consisting of the following members:

- Stanislau Lopes - INCRA - Brazil
- Isabelle Picelli- INCRA- Brazil
- Tomás Moreno - Directorate General for Cadastre - Spain
- Ricardo López - Geographical and Cadastral Institute and INMECA - Mexico
- Manuel Alcázar - University of Jaén - Spain
- Daniella Scarassatti - Municipality of Campinas - Brazil
- Rene Contreras -National Registry Center - El Salvador
- Ivan Eduardo Matiz Sánchez - Agustín Codazzi Geographic Institute - Colombia
- Melva Alejandra Frías -National Superintendency of Public Registries
- Geovanna Alexandra Chavez Cangas - Quito Cadastre Office - Ecuador

From the work of this group emerged the body established in the general assembly of Madrid held in 2019, which will most certainly provide continuity to the activities of the organization.

3. XII SYMPOSIUM ON THE CADASTRE IN IBERO-AMERICA-GRANADA 2019

As previously mentioned, between November 12 and 14, 2019, the XII Symposium on Cadastre in Ibero-America took place in the city of Granada (Spain). This annual event has brought together the Ibero-American cadastral community since 2006 and on this occasion brought together nearly 500 participants and 74 speakers who, throughout plenary sessions and round tables, addressed the present and future cadastral reality from the most diverse points of view.

This symposium was organized under the umbrella of an honor committee chaired by H.M. the King of Spain, Felipe VI, which also including the following Spanish senior officials:

- Minister of Finance
- Secretary of State for Finance

- Secretary of State for International Cooperation and for Ibero-America and the Caribbean
- Undersecretary of Finance
- Undersecretary of Justice
- Director General of Cadastre
- Director General of Registries and Notaries
- President of the Provincial Council of Granada
- Mayor of Granada

The Granada event gathers the documents produced by the city of Cancun and connects one more year with the effort of the Ibero-American cadastral organizations to hold an annual meeting in which to share experiences and renew the commitment to cooperation.

As in the previous meetings, held in Colombia, Portugal, Guatemala, Costa Rica, Argentina, the Dominican Republic, Brazil, Paraguay and Mexico, the Spain event revolved around collaboration, in this case expressly, as the motto of the event was *effective cooperation and sustainable land registry*, prolonged with an invocation to the indisputable effects of concerted efforts: *between all of us we are more*.

As the Secretary of State for Finance of the Ministry of Finance of Spain stated in his opening words of the meeting, *the cadastre is distinguished by an inalienable vocation of service to citizens and by its extraordinary value as a census of a capital asset for women and men who inhabit this planet: its immovable heritage, its land*.

The meeting in Granada was proposed as a forum for the exchange of experiences aimed at asserting the contribution of the Cadastre to socioeconomic development from a comprehensive perspective and as a tool to ensure real estate rights, guarantee a taxation proportional to wealth and help prevent fraud and concealment, without forgetting its growing contribution to the safeguarding of the environment or the fight against natural catastrophes.

To implement this ambitious purpose during the symposium, 74 lectures were given by representatives of native institutions of the 20 countries that participated in the event and which were developed in plenary and sectoral interventions in round tables within one of the following four main areas:

- Valuation and taxation.
- Cooperation and legal security.
- Surveying and geospatial data.
- New perspectives of service and resources applied to cadastral management.

As in previous symposia, the presentations delivered by the speakers are available on the organization's website and are added to the important documentary repository on this webpage, an authentic international reference in the matter.

Official webpage of the XII Symposium on Cadastre in Ibero-America

An excellent collection of documents is thus created, defining the coordinates of contemporary cadastral activity and its foreseeable evolution in the medium term, where a complete review of the situation of cadastral agencies in Latin America occurs and efforts are geared towards complete cooperation.

This meeting allowed the consolidation of some important concepts about what collaboration should be among cadastral institutions, including the following:

1. The cooperation among the organizations managing Real Estate Cadastres is both mutual assistance and learning.

2. The diversity of entities, nature of the activity, management models, and cultures represented is a wealth that facilitates the availability of solutions.

3. The purpose of coordinating actions should not be uniformity, but rather the continuous selection of initiatives that deepen the effectiveness, efficiency, and quality of each of the interested cadastres.

4. The shared objective of cooperation must be to have a complete, updated, correctly valued and available cadastre.

5. The Real Estate Cadastre has a purely instrumental character as an agent for economic transformation, social development, overcoming poverty and even achieving peace among peoples.

6. The digital revolution constitutes a unique opportunity to expand cooperation and the establishment of better processes that allow fulfilling the mission of all Real Estate Cadastres.

7. The cadastral information establishes an essential relationship between the person and the territory that is enriched by the security, equality, and justice that the cadastral institution introduces.

8. The best Real Estate Cadastre is not only the one with the greatest technical accuracy, it is also the one that is most useful and has the greatest acceptance and use by the requestors of land-related information.
9. The cadastral activity, as a generator of resources for the regional administrations, stands as a value of the first order for political decentralization or, what is the same, to deepen the efficiency of the territorial organization of the countries for the benefit and welfare of citizens.

10. As a general record of a capital asset such as real estate and in an accepted information society, the Real Estate Cadastre is called upon to be a decisive factor in development.

11. The new challenges that characterize the current situation offer the opportunity for cadastral information to extend its benefits to new fields of action such as the prevention and fight against natural disasters, the protection of the environment or even the development of measures that face pandemics such as COVID-19.

12. It is essential to strengthen collaboration with institutions naturally related to cadastral activity such as the Property Registry and to open new spaces for consultation with other apparently less influential agencies and even with private entities.

13. The parcel, understood as the spatial scope that defines property rights, is the basic unit of the cadastre. Its representation in a continuous parcel mapping and its identification by means of a unique and universal code are the foundations of the description of the property every cadastre is obliged to maintain.

14. The accuracy of the cadastral information must be in accordance with the purposes it serves and must be reconciled with the generalization, with having everything, and with updating, with having everything updated: completeness, updating and accuracy are key criteria for auditing a contemporary cadastre.

15. The cadastre must be a public institution serving the general interests.

16. The transparency of cadastral information and data protection should be addressed jointly to strengthen property security and respect for people's privacy, while facilitating the development of management models, applications and utilities that abound in the Welfare State.

17. The Real Estate Cadastre is an essential census for the performance of fiscal policies, both regarding the management of real estate taxes and the tax practice as a whole, since, in general, it accounts for the economic capacity of the taxpayer and its evolution.

In more specific areas, the symposium also consolidated some development vectors through which cadastral activity will take place in the short and medium term.

Thus, as far as new service perspectives are concerned, it is clear that:

1. The massive and combined management of large databases through big data procedures offers new features in terms of analysis and prospecting, both in the tax area and in any of those served by the Real Estate Cadastre and introduces new requestors of information.

2. The contribution of the cadastre to the management of smart cities and territories also opens an interesting space for the development of cadastral applications aimed at improving the quality of life of citizens.

3. Faced with the digital revolution and the intensification of cooperative formulas, the human resources that manage the Real Estate Cadastre must be sufficiently motivated and acquire all the knowledge and all the training to assume a new role as agents increasingly focused on the coordination of actions, customer service and the deployment of benefits.

Regarding valuation and taxation, the main arguments consolidated during the Granada conference are summarized in:

1. 1. The value of the property is one of the most relevant data of all those who define it, if not the most important, together with the area and the holder, since it displays its effects both on the side of tax obligations and on the protection of the owner's assets.

2. In the current situation, it is necessary to bet on the determination of amounts that represent with the greatest reliability the value of the asset in the market and that, from there, must be controlled in terms of each tax regime and each tax for the assessment of the tax bases. In this context, the reference value project that is currently being completed by the Directorate General for Cadastre of Spain is of special interest, as a representative value of the economic capacity of the property, and that coexists with the cadastral value, understood as the tax base of application in property tax.

3. Without a cadastre it is not possible to manage real estate taxation, without real estate taxation it is difficult to guarantee the continuity of the financial adequacy of the Public Administrations and without this financial adequacy it is impossible to sustain and expand the services that define the Social State of Law.

4. Real estate taxation is a unique and generalized example of institutional cooperation, where, very frequently, one entity deals with the census activity that characterizes the cadastre while another entity applies that information for the settlement of various taxes.

In terms of collaboration and legal certainty, a general acceptance picture was also drawn, which, in short, is defined by:

1. The need to advance in the coordination between the Cadastre and the Property Registry as a basis for legal security in the ownership and transfer of real estate, always based on the cartography provided by the cadastral institutions.

2. The regularization of real estate is a primary factor for social stabilization and economic development and cadastres are called to play a leading role in all of this, both to avoid land conflicts and to sustain growth on a consolidated basis such as that offering public recognition of the ownership of the properties.

3. The cooperation between cadastral institutions and those public entities transforming or authorizing transformations on the territory is the decisive factor for the continuous and generalized maintenance of the cadastral databases.

4. Similarly, collaboration between these public entities is considered to be of the greatest interest so that the dissemination of cadastral information and customer service reaches the entire territory and facilitates the right of access to cadastral data and the cost of compliance of obligations.

5. Professional colleges and associations must also play a leading role in the performance of cadastral activity by improving the training of the groups they represent and harmonizing operational criteria, in such a way that they fulfill a relevant intermediation role between the cadastre and society to ensure proper maintenance of the databases.

6. The coordination of actions with international organizations impacting property management must be kept in mind, especially in the context of the 2030 Agenda and the Sustainable Development Goals that structure it.

Finally, and in terms of surveying and geospatial data, the Granada meeting also allowed to lay solid foundations for the deployment of development initiatives based on two common rules for the Ibero-American cadastre community:

1. Cartographic information must respond to the principles of generality and continuous updating that define any real estate cadastre and should be based on greater technological neutrality and formal simplicity, with the aim of enabling the greatest number of needs to be met and facilitate the extension of all its capabilities.

2. The definition of the parcel structure should be in line with the eligibility and precision criteria for fulfilling its role as the basis for the physical identification of the property and to reconcile those criteria from a sustainable perspective that ensures continuous and safe updating processes.

As a final summary, the XII Symposium on Cadastre in Ibero-America consolidated the validity of an Ibero-American community of cadastre, plural and committed, and a sustainable cadastral management model based on inter-administrative cooperation and the use of the digital revolution, geared towards socio-economic development through its application on three fronts:

1. Contribution to the financial adequacy of public administrations.

2. Assurance of real estate.

3. Facilitation of all public policies and private initiatives that require real estate information.

4. TOWARDS A STRENGTHENED CATASTRAL COMMUNITY IN IBERO-AMERICA

After the XII Symposium on Cadastre in Ibero-America in the city of Granada, on November 15 of last year the VII ordinary general assembly of the CPCI took place in Madrid as the culmination of the work addressed in the symposium and with the perspective set on the strengthening of the organization, understood as a contributing factor to strengthen the Ibero-American cadastral institutions.

The high participation of member agencies and the interest that the meeting aroused during the months prior to the event, underlined during the Granada symposium, has made it possible to materialize a general desire to strengthen cooperation.

Consequently, the results of the Madrid assembly defined a new horizon for the organization and opened a renewed collaborative scenario based on three fundamental elements:

1. Incorporation of new entities to expand the institutional base of the organization, strengthen its representativeness and add perspectives of high added value.

2. Creation of a Technical Secretariat in charge of giving greater continuity to the organization's work and selecting relevant initiatives.

3. Election of a new steering committee for the 2019-2021 two-year period committed to intensifying the strengthening of the organization.

With regard to the first measure, after the VII general assembly of the CPCI, various institutions of enormous importance have joined the organization, whose suitability and soundness underpin the plurality of the organization and its capacities to carry out its goals.

The Federal Revenue of Brazil (RFB), the Directorate of Cadastre of the State of Chihuahua under the Secretariat of Urban Development and Ecology, the Cadastral Institute of the State of Aguascalientes, and the General Directorate of Cadastre and Public Registry of Property and Commerce of the State of Nayarit joined as full members, since they exercise direct powers of cadastral management.

These are recognized organizations that, on the one hand, deepen the representation of the various Mexican states to be able to address application initiatives in a country with a federal structure and, on the other, with regard to the RFB, it is the integration of the largest fiscal institution in Ibero-America.

The RFB experience will contribute among many other contributions that of the project it carries out for the consolidation of the various territorial databases in Brazil, in what constitutes a first-level example for the construction of a confederate cadastre that, from the beginning respecting the competencies of each information provider, facilitate continuous updating.

The Chilean Internal Revenue Service (SII) has also been introduced as a full-fledged member of the CPCI, an institution that to date participated in the organization as an observer and has an extraordinary track record in the field of real estate taxation.

As new observer organizations, the Inter-American Center of Tax Administrations (CIAT) and the Institute for Fiscal Studies (IEF) are added, two entities with a broad scope and involvement in the activity of Ibero-American tax entities that, from their respective competencies, will enrich the work of the Committee.

Of important significance also for the future of the CPCI is the establishment of a Technical Secretariat, as a body destined to coordinate and promote the work of the organization that was created as a wide-ranging commitment that is structured according to the preferred areas and the following preliminary responsibilities, although under a collegiate work operation:

1. Tenure, property registries and Voluntary Guidelines on Land Governance: COFOPRI - Peru, Judicial Administrative Department of the State of Piauí - Brazil and Kadaster - Holland

2. Valuation and Taxation: University of Jaén

3. Cadastral implementation: National Institute of Rural Settlement and Agrarian Reform - Brazil

4. Cadastral management: Federal Council of Cadastre of Argentina

5. Cooperation and institutional development: Directorate General for Cadastre of Spain

The new entity was created from the conclusions reached by the strategic group formed in Cancun, which has already been referred to in this work and which has carried out its work in the year between the general assembly of Mexico and that of Spain.

The third development and strengthening pillar of the CPCI after the Madrid assembly is the creation of a new steering committee that, elected by acclamation, was made up of the following organizations:

- Presidency: Directorate General for Cadastre of Spain

- Vice-presidency: Geographical and Cadastral Institute of Quintana Roo (Mexico)

- Office for Central America and the Caribbean: Registry of Cadastral Information (Guatemala)

- Office for South America: COFOPRI (Peru)

- Office for Europe: *Provisionally, Directorate General for Cadastre of Spain*

The winning candidacy presented a program based on two priority approaches and three action programs.

Regarding the approaches, the path initiated by the CPCI is characterized by emphasizing the continuity of its actions and carrying them out collectively within the new Technical Secretariat.

In relation to management programs, these are specified in the following:

1. Governance: it is about establishing a strengthened regime of stable and transferable government between presidencies, which traces a path of continuity and link when organic changes occur and that facilitates interaction with the different entities involved in the activity of the CPCI.

2. Communication: the objective is to deploy a set of actions aimed at facilitating the visibility of the organization and its appreciation by the Ibero-American institutions related to the Real Estate Cadastre.

3. Production: the purpose of this new line of work consists of the drafting of reference initiatives for the Ibero-American cadastral institutions as well as in the definition of management and data models; also the identification of experts and experiences that at the request of organization members can meet their development needs in the different aspects of the cadastral activity.

In summary, and in the words of the new president of the CPCI and General Director of the Cadastre of Spain, Fernando de Aragón Amunárriz, the new executive committee of the organization acquires the *firm commitment to consolidate and deploy on a second level an organization that is irrevocably oriented to facilitate development of the Ibero-American cadastral institutions*.

For all this, cooperation appears once again as the most important transformation lever: from a purely cadastral point of view, through the sharing of experiences and assistance offered by the CPCI itself; from a managerial perspective because a reality as complex and changing as real estate requires cooperation among all the agents that transform the territory or authorize these modifications so that the indispensable update of the cadastral database can be carried out. This collaboration is also essential so that the information from the Real Estate Cadastre reaches the entire territory and all the people in its field of management.

In line with this operational cooperation, during the Granada symposium, three experiences developed by the Directorate General for Cadastre of Spain were highlighted, which are listed below and were of special interest during the event sessions:

1. In the first place, the platform recently put into service and called the *management map*, which is a single space for making cadastral modifications by all the actors involved in the material or legal modification of real estate. This provides a picture of the transformed reality pending incorporation into the Real Estate Cadastre, which competent entities process in carrying out the legal framework of application or the agreements signed for it.

2. Secondly, the ongoing project to determine an approximate market value for each property, known as *reference value*, and which, also based on collaboration with third parties and the consideration of various sources, allows to attribute the economic capacity of each asset.

3. Lastly, the network of *Cadastral Information Points (PIC)* established in Spain which, with almost 3,800 services available, constitutes the most extensive network of face-to-face care for citizens in the country. It is a network of service

centers established essentially in municipalities, supra-municipal administrations and professional associations where officials of these entities authorized by the Directorate General for Cadastre of Spain provide face-to-face information to the citizen in order to disseminate that right and avoid travel to the offices of the very Directorate General for Cadastre.

And all this from the consideration of the cadastral institutions such as tax administrations, capable of managing or contributing to manage a capital tax for any tax system such as the property tax, which recurrently levies real estate wealth to support the Local Treasuries and thus guarantee the provision of basic services and proximity to citizens regardless of economic cycles other taxes have.

Capable of carrying out this transcendental task and much more, the Real Estate Cadastre is a data infrastructure that contributes to the management of many other real estate taxes linked to the ownership of the property, its transformation or its transfer, through related levies on presumed or direct income.

5. CONCLUSIONS

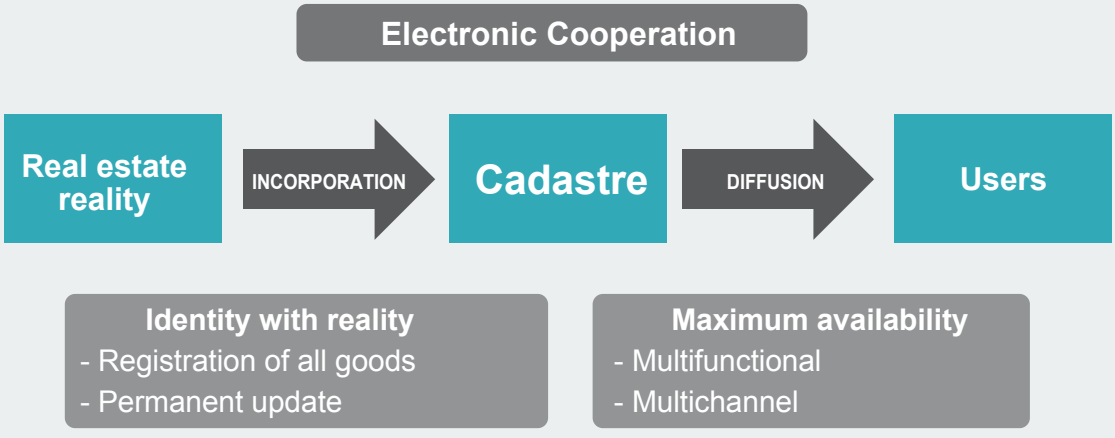
Inter-administrative cooperation has established itself as an irreplaceable management tool in the framework of complex and changing scenarios such as those that public entities must face today. Even more so if the scope of competence of such entities is cross-cutting in the context of government action, as is the case with cadastral activity.

The task of the Permanent Committee on Cadastre in Ibero-America falls under this context of inter-administrative cooperation. It is an organization established in 2006 which consists of 92 cadastral institutions from 22 countries and the Commonwealth of Puerto Rico. It comprises 21 million square kilometers where about 700 million people live and whose main purpose is to facilitate socio-economic development through the deployment of all the capabilities of the Real Estate Cadastre.

Its work can be seen in the exercise of three large areas of action: real estate taxation, real estate securing and contribution to any public policy that needs to identify and know the territorial reality.

To that end, the CPCI conducts collaborative activities among its membership that reaches its peak in an annual symposium, the last edition of which was held last November 2019 in the Spanish city of Granada. It brought together nearly 500 experts who participated with 74 papers addressing cadastral activity from all points of view and revealing a wide range of future initiatives in this area.

The Granada event revealed the generalization of a management approach widely shared by all participants in the event: the intensive use of new technologies and the cooperation among public institutions that transform or authorize transformations of the territory. They are the pillars of contemporary cadastral activity and deepening them guarantees the sustainability of the cadastral agencies, that is, their greater capabilities as a permanently updated and available real estate registry, elevated by the demand to a registry of services as well as obligations.



Strategic vision of a cooperative and services cadastre

From this point of view, cadastral organizations are reoriented towards entities that exercise the leadership of participatory institutional systems where each organization contributes its best, where the cadastral agency has data infrastructures and regulatory standards and the others separate their contribution to the system in the processing of real estate alterations produced.

And where recurring and periodic update operations give way to the establishment of continuous, effective, and efficient update and service models to overcome the traditional investments dedicated to updating cadastral information that neglect its maintenance until the next massive update operation, often after 5 or 10 years, in which cadastral information has lost its value.

The true value of cadastral information resides in its identity with the material and legal reality, which can only be guaranteed by the availability of management models that ensure permanent communication always based on inter-administrative cooperation.

Hence the motto behind the Granada event: *effective cooperation and sustainable land registry*. Only in this way, from an authentic collaboration among institutions, which facilitates the early capture of all the changes and reduces the administrative burdens on citizens, is it possible to have a sustainable cadastral institution, continuously strengthened and appreciated to offer its best effects on people and their well-being.

A renewed CPCI is betting on defining the data models, processes, and services capable of serving this purpose and strengthening the instructional, technological, and regulatory pillars of the cadastral institutions. Most recently, this effort has been abruptly truncated by the pandemic of COVID-19, but CPCI aspires to resume its work with full strength as soon as circumstances allow.

This effort is advanced always based on the tax purpose that encourages and supports any Real Estate Cadastre, converted into a real estate census essential for tax management. It could grow in importance to match the significance of a taxpayer census both in the tax models of each country and in paradigms for its evaluation as established by the International Monetary Fund (IMF) in its *Tax Administration Diagnostic Assessment Tool* (TADAT).

The CPCI and its associated institutions dedicate their best efforts to this endeavor, by mobilizing territorial information at the service of socioeconomic development, always keeping in mind that the real estate assets render due benefit to the community they support.

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DIGITAL ECONOMY:

First estimate for Ecuador

Heidy Paola **Ocampo Meneses**
Angel **Sandoval García**

SYNOPSIS

In Ecuador, studies on digital economy are almost nonexistent, that is why, through a methodology of text analysis, data mining among other tools, this first description of the digital economy has been made on two fronts. The first one identifies the forms of e-commerce developed in B2B, B2C and C2C and the second shows the participation in the national market of companies that have business models specific to the digital economy, such as the use of multilateral platforms, vertical integration business models, input suppliers and resellers. In this way, the study is an input for public policy makers.

CONTENT

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INTRODUCTION

The digital economy poses major challenges for tax administrations (hereinafter TAs). One of them, for example, is that the taxable event does not occur in a particular physical place but through digital channels. The speed with which technological developments progress and the creation of new markets leaves the TAS in a somewhat backward situation, both in the normative and in the physical infrastructure, to address tax compliance and detect new methods to establish the taxable event; as well as new forms of taxation. This limitation has resulted in increased risks of erosion of the tax base.

At the Lisbon Tax Summit held last October 2018 (Inter-American Center of Tax Administrations [CIAT], 2018), the TAs worldwide have exchanged experiences on actions and challenges in the digital world. In this regard, new taxes were proposed such as those levied on digital services as: - sale of on-line advertising, activities of digital intermediaries, sales of data; in addition to broaden the scope of value added tax (VAT) on goods and services purchased by foreign suppliers by applying the principle of destination. Similarly, the TAs of countries such as India, Sweden, Italy, and Switzerland consider that the important tools to address this sector of the economy are those related to information exchange, multilateral audits, and the incorporation of new information technologies in TAs.

Among the main changes made from the tax point of view, at the Latin American level, we can emphasize that the taxable event happens on the consumption of digital services. This is the case in Argentina, Colombia and Uruguay, whose tendency is to tax through Value Added Tax. This is a global trend. The Ecuadorian case is alien to this context because there is no information that can characterize the digital economy and shed light on what is the best strategy to follow.

Based on these considerations, this paper presents the first conceptual and quantitative analysis of the digital economy in Ecuador. To this end, we performed a descriptive and conceptual analysis about the characteristics and best practices of the TAs; in addition, a quantitative analysis is developed using a methodology of *text mining* to establish a first approximation of the participation of major foreign firms in the Ecuadorian economy, through digital platforms.

The article consists of four sections: the first provides a conceptual approach to the digital economy. The second raises the main concerns and practices of tax administrations at the international level. The third section provides a quantitative analysis of the digital economy in Ecuador. Finally, the last section collects a series of final reflections.

1. TOWARDS A CONCEPTUALIZATION OF THE DIGITAL ECONOMY

The use of new information technologies and the digital transformation have spread to all sectors of the economy and society. According to the organization for Economic Cooperation and Development (OECD, 2018) over the past 20 years, the access to internet has grown from 4% to 20% in the entire world population, implying that this is an agenda item not exclusive to developed countries.

Together with this fact, another important milestone in recent decades is the massification of mobile connectivity generated by individuals, companies, and governments, which has transformed the very functioning of institutions. The massification of mobile connectivity has generated new business models, developing new sectors to the economy, new forms of work and new social interrelations. In this sense, the digital economy is emerging as a new concept and a new way of making economy[1].

In the first instance, the digital economy was conceived as a system of access, adoption and use of new technologies both in the productive sectors, existing markets, as well as in the state. The analysis from this perspective proved insufficient when, around new technologies, new markets, new business models, started to be created, in which traditional regulations were insufficient to promote the efficiency of markets and public policy. Thus, analyzing the digital economy today involves adding the study of a series of interdependent systems that seek greater efficiency in institutions and markets.

The Economic Commission for Latin America and the Caribbean (ECLAC, 2013) approaches the definition of the digital economy and considers it as an ecosystem where the elements of the information and Communication Technology (ICT) industry interact, such as communication networks, hardware equipment, processing services and web technologies. Similarly, this Commission points out that the incursion of ICTs in the different branches of economic activity has achieved a level of transformation in the private, public, social and productive scopes, so the digital economy should not be conceived as a portion of the economy but as an integral field of analysis, where each component is referred to with all its complexity, as an additional ecosystem (Cepal, 2019).

1.1 Towards a characterization of the digital economy

One of the most important characteristics of the digital economy is its degree of maturity in countries. To measure this, ECLAC (2013) addresses three components: (a) broadband network infrastructure, (b) ICT applications, and (C) end-users and their impact on the productive, social, and environmental spheres.

The Inter-American Development Bank (IDB, 2015) developed the Broadband Development Index to measure in the Latin American region the speed with which digitalization is adopted. As a result, it was found that while countries such as Chile and Barbados lead digitalization, Suriname and Haiti have just begun with the incursion of ICTs. Similarly, when conducting a sectoral analysis, it was found that sectors such as finance, communication and manufacturing have greater opportunities to assimilate technological innovations in the short term, unlike sectors such as construction and agriculture.

Among the constraints to accelerate the development of the digital economy in Latin America is access to digital banking accounts and services and, therefore, the flow of online financial transactions. Statistics show that in Latin America, 47% of the population over the age of 15 do not have access to bank accounts, which is a high value when compared to the OECD member countries, which is 8% (IDB, 2015). The lack of security and regulatory standards to protect people's data is another limitation to undertaking online business.

In Latin American countries, the use of broadband and ICT, compared to OECD member countries, presents a highly significant gap. For example, in 2015, 81% of the population in OECD countries use the Internet, while in Latin America only 46% use the Internet. A similar case occurs when analyzing the percentage of the population that uses mobile broadband, as in the OECD countries it is 68%, unlike in the countries of the region it is only 22% (IDB, 2015).

The digital economy also includes the development of an institutional framework that suits the dynamics generated by the use of new technologies in the economic activity, which involves considering, from the private and public sphere, the facilities or incentives are provided for innovation, entrepreneurship and the use of new technologies focused to improve the competitive potential and open new markets. Against this fact, the Broadband Index considers a more systemic view.

This vision of the digital economy implicitly carries a notion of development where the enabling business environment, human talent and governance are fundamental. The measurement of this index was applied for the OECD and Latin American countries from a set of more than 66 variables extracted from surveys and official sources in each country to 2015. Among the main results are the following:

a. Compared to OECD countries, barriers persist in Latin America to implement broadband infrastructure to expand fixed and mobile service connectivity. There is no clear policy for the adoption of services with a high level of connectivity, nor have been developed new services involving the use of ICT in the productive sphere. One of the pillars where there is a greater gap is support and financing, which implies a chain effect for the other pillars.

b. Considering that the index ranges from 1 to 8, the countries with the greatest potential for application

1 Among the systems stand out: political and legal framework, entrepreneurship, social and economic characteristics and, support and financing.

development and use of new technologies in the five pillars are the United States (6.31), Finland (6.14), Switzerland (6.13), Sweden (6.08) and Denmark (6.01). Similarly, of the 58 countries analyzed by the IDB (2015), Haiti (1,90), Venezuela (2,39), Belize (2,47), Suriname (2,55) and Bolivia (2,64) have the lowest indices; Ecuador is ranked 52 with an index of development in applications of 2.79, being the axis of support and funding is the lowest with 1,19 followed by the axis of regulation and legal framework with a 2,47.

c. Of the countries in the Andean region, Colombia (3.85) and Peru (3.30) have a better positioning in the ecosystem of applications compared to Bolivia and Venezuela, which are the lowest.

In summary, the situation in Latin America, regarding the degree of development of new technologies and the use of applications, is still incipient and immature; moreover, the regulatory framework is weak, although there is a positive perception regarding entrepreneurship and the deployment of digital infrastructure.

2. THE DIGITAL ECONOMY AND TAX ADMINISTRATIONS

When considering the elements of the ecosystem of the digital economy, the tax field is a permanent challenge. There, the role of the TAs is fundamental both to minimize business costs when meeting their tax obligations, and to make more efficient the management (collection and control).

Faced with the dynamics of the new business models being created in the digital economy, the tax regulatory bodies are analogous, their technological capacity insufficient and the standards are rigid. Therefore, among the concerns of the TAs we can identify some aspects such as: the concept of territoriality or physical place where the transactions are carried out, the origin and the attribution of benefits on which the tax obligation may fall.

2.1 Business models present in a digital economy

Once the characteristics of a digital economy have been mentioned, it is also necessary to characterize the business models that arise from the use of new technologies in production processes and in trade. In this regard, two identifiers or categories of business lines can be analyzed. The first is that related to electronic commerce, that is, the purchase and sale of goods or services using computer networks. This classification is useful for analyzing taxes such as VAT. In this sense, models of electronic commerce can occur between businesses (B2B), between businesses and consumers (B2C) or between consumers (C2C) (Cepal, 2019).

The second classification adopted by the OECD (2018) is related to the way in which these new lines of business add value; that is, the unit of observation remains the line of business and not the enterprise. This makes classifications not mutually exclusive. The latter classification mainly identifies the role of agents when they use new technologies for trade. Among the most prominent lines are resellers, multilateral platforms, vertical integration, or suppliers of inputs.

2.1.1 Business models according to e-commerce

In taking the concept used by the OECD (2011), electronic commerce is considered to be the transaction of purchase or sale of goods or services through computer networks, where delivery may or may not be online. It is direct when the whole process of ordering and delivering the product or service is done online, and indirect when ordering is done online and delivery is done through conventional channels (OECD, 2015). This form of classification is valid for analyzing the impact on Value Added Tax. Three business models emerge around e-commerce:

2.1.1.1 Business-to-business (B2B): refers to e-commerce transactions that take place between businesses. Under this modality you can identify service delivery activities such as: logistics services, computer services over the network or web content management services.

2.1.1.2 Business to consumer (B2C): in this business model, the following characteristics can be identified: goods and services are sold to final consumers, the direct or indirect modality can be used, and goods and services can be tangible or intangible.

2.1.1.3 Between consumers (C2C): the form of operation is through a multilateral platform that acts as an intermediary between consumers to transact their assets by publishing their ads on websites. These platforms can be financed through consumer charging or through advertising.

2.1.2 Business models according to the way they generate value

The business models described below have gained importance with the digital economy. There, value aggregation responds to the concept of Value network where the user's participation and impacts on the network are key in generating benefits (ECLAC, 2019). The incorporation of new information technologies makes it possible to strengthen the links of the production chain generating greater cost efficiency, expanding markets by not requiring physical presence and generating competitive advantages in various markets.

2.1.2.1 Multilateral platforms: in this modality, users who act as suppliers, have the property rights of the assets and responsibility with the consumer. The latter, on the other hand, requires membership in order to have access to the market through the network. According to ECLAC (2019) in this group can be identified some companies such as: Uber, Didi Chuxing, Airbnb, Xiaozhu, BlaBlaCar, Sina Weibo, Amazon Marketplace, Taobao, Facebook, NetEase or Google, Deliveroo, Foodora, Uber Eats.

2.1.2.2 Resellers: when companies acquire the rights to control the assets and assume responsibility with the consumer at the time of resale. In addition, they control prices and do not allow interaction between end users. No membership is required to purchase the product. According to ECLAC (2019) some examples are: Amazon, Alibaba, JD.com, Spotify, Tencent Music distribution or Netflix when buying content.

2.1.2.3 Vertically integrated companies: under this modality the companies acquire the property rights of the suppliers, integrating this new business as part of their chain. In this group stand out: Netflix in film production, Huawei, the line of hardware and cloud computing (ECLAC, 2019).

2.1.2.4 Suppliers of inputs: it is for companies that supply intermediate inputs for the production process of goods or services of another company, the most representative case is Intel.

The OECD (2018) points out that the business models of resellers and multilateral platforms are the ones that have developed the most in the economy, but at the same time, they are the ones that generate the greatest concern to the TAs at the time of applying the fiscal controls.

2.2 Key elements of the digital economy to consider in tax systems

The new market dynamics in a digital economy bring new options and challenges to TAs when it comes to increasing individual benefits, and these are not compensated by the contributions that agents make to the treasury. The following identifies some characteristics of the digital economy that pose challenges in terms of taxation (OECD, 2018 &; Cepal, 2019):

a. **Mobility of intangible assets:** refers to companies in the digital economy that have large investments in research, development, use of digital platforms and *software*. Such mobility generates a potential dissociation from the jurisdiction of who owns the assets, who generates their development and who generates income from their use. From the consumer's point of view, it is difficult to identify the location of the user who consumes the product. By using virtual networks, one can acquire the application in one place, use it in another and have residence in a third country. By analyzing asset mobility in the production process, it is possible to optimize costs and manage the distribution, production, and marketing operations from a central location different from each operation.

b. **Data use:** refers to the ability to collect, store and use large volumes of information to mitigate costs, enhance competition and access to new markets. This is the case with the use of tools such as *Big Data*.

c. **Network effects:** includes the use of massive diffusion tools such as social networks.

d. **Multilateral business models:** occur when positive externalities are generated in a network, that is, there is an interdependent relationship between different groups and the base role is generated by the network or platform that allows the exchange.

e. **Monopolies and oligopolies:** networked businesses generate competition failure as they tend to concentrate the market. In terms of cost, the digital platforms have high initial costs, then variable costs are reduced and having more network users allows them to become a dominant force in the market.

f. **Volatility:** corresponds to the maximum reduction of marginal costs for the use of the network. This removes, in some way, barriers of entry to new businesses.

2.3 The TAs and their adaptation to the digital economy. Measures suggested by OECD

Internationally, the OECD issued in 2013 a series of actions to member countries to combat tax base erosion and profit shifting (BEPS) (OECD, 2013). Action 1 in particular suggests implementing a tax as a compensatory rate to try to correct, at least, the differences between traditional and digital markets, as well as resident and non-resident beneficiaries. Other suggested measures include:

1. 1. To propose as an option the redefinition of permanent establishment, in order to reduce practices that evade the tax obligations for income obtained under the condition of permanent establishment. Under a broader concept, the auxiliary or preparatory activities should be incorporated because they occupy a relevant role.

2. Establish clear and simple processes regarding the applicability of transfer pricing methods. In particular, the case of profit-sharing of global value chains. In this regard, it is relevant to consider the dynamics of intangible assets, the use of data and the expansion of global value chains.

3. To analyze the relevance of the legislation to determine the existence of a link to a jurisdiction for tax purposes. The increase in digital technology means that relationships between companies and consumers change without requiring a substantial physical presence.

4. Review the tax qualification of income. In view of the new digital products and means for the provision of services, it is necessary to reconsider the correct tax qualification of the payments made. The OECD highlights the case of the business models known as “cloud computing”.

The proposals for action proposed by the OECD have fostered spaces for discussion at the global level, allowing to expand the discussion of concepts such as tax justice between nations, referring to the attribution of national gains and losses in an international context for the case of cross-border transactions.

Accordingly, these elements are currently being ratified for discussion. This is due to the fact that few countries have been able to put forward proposals, adopt rules or implement with average success tax measures related to the digital economy.

2.3.1 Value Added Tax (VAT)

The value added tax is levied on the difference generated between sales and purchases considering two principles: (1) the source tax, that is levied on goods and services produced domestically, and (2) the destination tax, that is levied on goods and services consumed domestically.

As part of the alerts that can be generated for tax systems regarding VAT, in the digital context, ECLAC (2019) highlights the following:

a. **Exemptions on the import of goods of low value:** These exemptions were created because of the high cost of collecting VAT on these products compared to the value collected. However, the digital economy has made the tools available and, with this, B2C e-commerce has increased exponentially in recent years, so it would be necessary to review in each country the importance of this item of imports and the cost-benefit ratio for the tax administration.

b. **Remote digital supplies to consumers:** in this case, there is a problem with the physical presence in the country where the customers reside. In the case of B2B e-commerce, VAT could be collected by the resident company, but with the B2C line, as there are no incentives for final consumers to declare and pay the tax, which would have a direct impact on the collection compliance.

c. **Remote digital supplies to exempt entities:** the case of transport services, which are exempt from VAT and hire a foreign platform, which is therefore also exempt from VAT, unlike when the service is provided by a company resident in the country, in which case yes it would generate a VAT to pay.

In Latin America, the progress is still modest, only 3 out of 16 countries (Argentina, Colombia, and Uruguay) apply VAT to digital services. These efforts have involved adjustments to the rule for non-resident companies, which have been incorporated into the VAT taxpayer register. The situation is even more incipient for the case of income tax, in the international debate there is no consensus proposal, so ECLAC (2019) proposes to comply with the OECD suggestions in respect of tax conventions and focusing efforts where users are relevant in the generation of value.

2.3.2 Income tax

The influence of the digital economy not only impacts the value added tax, but also the income tax, which taxes the profits and revenues obtained by the economic activity generated. For example, there are effects or issues that need to be resolved normatively in the TAs as: economic presence without physical presence, the allocation of income from intangible assets and the contribution that customers can make to value creation.

2.4 Experiences of TAs on the digital economy in different countries

The meeting of the Governing Council of the European Community (European Community, 2018) raised some key elements for the design of a modern fiscal framework that enhances benefits for producers, consumers, and the state. In this regard, in line with the OECD resolutions and reports on the challenges of the digital economy for taxation and Action 1 on tax base erosion and profit shifting, they proposed a tax on digital services (ISD) of 3%. This measure seeks to have a fairer international tax system and reconfigure double taxation agreements to adjust the digital characteristics.

In addition, the OECD gave consideration to member states: (i) that the application of the tax be restricted, i.e. that it be levied on gross revenues derived from digital services, mainly those where the creation of value by the user is a main component; (ii) that the definition of the place of taxation corresponds to the place where the users of the service are; and (iii) that member states share the tax information (OECD, 2018).

In other countries such as Israel and India, for example, a significant economic presence is considered as a key to determine the existence of a permanent establishment. This measure focuses on digital services without physical presence for both B2C and B2B. Thus, while in Israel the taxable event rests on the provision of online services (*via Streaming*) to Israeli residents, consumers and Israeli companies whose proportion of web page users is high; in India it is based on transactions with respect to any good, service or property carried out by a non-resident, which includes the provision of the software downloads subject to prescription of a payment threshold (OECD, 2018).

Among the main changes made in the digital economy worldwide, it can be highlighted that the taxable event is on the consumption of digital services and therefore

there is a tendency to tax, through the value added tax as do Argentina, Colombia and Uruguay. In these three countries, both legal entities and individuals are considered to provide digital services.

In the case of Argentina, the object of VAT is expanded, and digital services provided by a resident subject domiciled abroad are incorporated, to the extent that their use or exploitation takes place in the country. In Colombia, the encumbered Act applies to the digital transactions of non-resident suppliers, as in Uruguay. For the latter, in addition, income tax is included those activities derived from the production, intermediation or distribution of cinematographic films, direct television broadcasts and any audiovisual content, including those made on the internet, technological platforms, computer applications among others similar, to be considered Uruguayan source provided that the claimant is in national territory (ECLAC, 2019).

As evidenced by international experiences, the tax measures taken coincide fundamentally in a tax figure mainly related to consumption. Thus, the need arises to have a cadastre in each country that allows to keep records and tax statistics for these new business modalities.

3. ECUADOR: A FIRST ASSESSMENT OF THE DIGITAL ECONOMY GLOBAL VOICES

3.1 Regulatory aspects

As part of the commitments made at the Second Ministerial Conference, held in May 1998 in Ottawa, the countries of the region began to develop regulations on electronic commerce as its rapid expansion was becoming an area of uncertainty for the traditional trade and TAs. For example, in Ecuador the first measures on electronic commerce were issued in 2002. Amendments were made to the Criminal Code, giving rise to computer infringements such as unauthorized access, computer counterfeiting, computer fraud, computer damage, and violations of the right to privacy.

Since 2008, Ecuador has recognized in the Constitution of the Republic (CRE, 2008, article 66, paragraph 19) the right to the protection of data and personal information, assuming the responsibility to ensure the levels of security and adequate treatment of information. Subsequently, in September 2013, the National Secretariat of Public Administration (SNAP), by Ministerial agreement 166 (SNAP, 2013), ordered the implementation of the Government Information Security Scheme (EGSI) - Ecuadorian technical standard INEN ISO/IEC 27002.

The policy of access and use of Information Technologies gained strength in 2015, when the Organic Law on Telecommunications was adopted, which through its art. 141 confers to the Ministry of Telecommunications and to the Information Society " ... the Office of the supervising telecommunications and the Information Society, of ICTs, information and communications technologies and of Information Security" (Ley Orgánica de Telecomunicaciones, 2015). This meant a positioning at state level for the prioritization, formulation and implementation of plans and projects that support scientific research and promotion of new information technologies in both the public and the private spheres.

In 2018, the Ministry of Telecommunications and Information Society (Mintel), presented its "Strategic Sectoral Vision 2018-2021" that was the context of the Telecommunications policy in four major components: (1) infrastructure and connectivity, strengthening the access of telecommunications services; (2) electronic government, through the simplification of procedures; (3) information security with prevention and resilience of the technological infrastructure, through integrated systems of cyber security and technical and legal instruments for the protection of personal data (4) information society and knowledge, through the promotion and appropriation of ICTS for the improvement of living conditions (Mintel, 2018).

Within the infrastructure axis, Mintel places particular emphasis on digital platforms. In the first instance, it defines them as search engines, job portals, markets or trading platforms, content media and services, online games, social networks, and telecommunications services. After diagnosing the international problem, they point out that, without denying the benefits of e-commerce and the digital economy, it is necessary to combine institutional efforts to establish regulations

that protect consumers and prevent tax erosion. Finally, Mintel proposes as a strategy to generate a portal containing information on digital platforms to guide citizens on the use and application.

The most recent diagnosis for Ecuador was that developed by Mintel in the Strategic Vision Plan. It highlights that, as of December 2017, Ecuador has had an increase of 8.3 million users during the period 2010-2017 in access to mobile internet, which means that 52.07% of the population has access to this service. Similarly, Mintel conducted a perception survey of more than 7,700 companies in the country in various sectors, in order to identify the importance of ICTs for companies. The results indicate that 31% of companies have a website and 18% sell products online. In addition, on average 18% of companies have software to increase their productivity, such as *Enterprise Resource Planning* (ERP) Systems, Customer Relationship system (*Customer Relationship Management* [CRM]) and electronic invoicing (Mintel, 2018).

3.2 General figures of the Digital Economy in Ecuador

In Ecuador, there are no regular or up-to-date statistics on companies or business models to characterize the digital economy, and if available, they start from cross-sectional surveys with a small number of participants and lose representativeness when the information is disaggregated. However, they provide a brief idea of the importance of the digital economy in the country.

Specifically, it is worth mentioning three important reports on the digital economy in Ecuador: (1) Survey of Manufacturing and Mining, Internal Trade and Services, whose latest version (2015) included a sample of 3,245 companies[2] and owns the module Technologies of Information and Communication technology (ICT), (2) Report of the Chamber of the Ecuadorian Electronic Commerce (ESCC) and the Universidad del Espiritu Santo (UEES) is produced in 2018, that includes information from the perception survey conducted to 2.802 persons resident in Ecuador, between digital buyers and non-buyers (CECE-UESS, 2018); and (3) Statistics from credit card of the Superintendence of Banks and Insurance.

Based on the ICT module, corresponding to the manufacturing and mining survey, it can be seen that 13.9% of the surveyed companies make their purchases via internet, while 9.2% make sales via internet. While these statistics are not representative at the national level, they provide a general idea of the internet activities of businesses.

According to INEC (2015), 66.7% of the companies surveyed invest in information technologies, particularly those in the manufacturing sector with 24.6% and the trade sector with 23.9%. Such investment involves the purchase of physical devices, software or computer applications that operate on these devices and similar. Electronic commerce in Ecuador is limited this year.

In addition, as a reference of analysis, we have used the survey conducted by the Ecuadorian Chamber of Electronic Commerce and the University Espírito Santo (CECE-UESS, 2018). The results presented show an improvement and progress in electronic commerce in Ecuador. The country has a high level of internet penetration in the population with 79.9%, higher than the Latin American average, which in 2018 was 71.5%. The countries in South America with the greatest use of the internet are Argentina with 93.1%, Paraguay with 89.6% and Uruguay with 88.2%.

As for the transactions that give way to the development of e-commerce and thus to a greater dynamics of the digital economy, the CECE - UESS report indicates that between 2017 and 2018, the number of transactions (digital purchases and sales) increased by 17%, from 136 to 184 million transactions.

Likewise, in 2018 digital sales recorded a positive annual variation of 13%, growing from 10,551 to 11,970 million dollars, which represents about 10% of Gross Domestic Product (GDP). However, electronic commerce involves the relationship between consumers and producers (B2B, C2C, B2C); through digital means to achieve an

2 For the period 2012-2015, the survey was worked with spliced samples, an exercise that analyzes the composition of the economic sector by branch of activity, so as to ensure its representativeness.

economic transaction. The share of e-commerce in Ecuador, in terms of sales, does not exceed 1% of GDP as they reach only 1,286 million dollars[3].

Despite the growth in sales, the average consumption turnover (paid by credit cards) abroad, as well as those made by internet, show a decrease, going from USD 136.5 and USD 107.4 million in 2016 to USD 75.6 and USD 77.0 million in 2018, respectively.

To analyze the growth of transactions in detail, we considered the evolution of the share of consumption abroad and internet consumption, in the total transactional movements published by the Superintendence of banks and insurance. For the third quarter of 2016, the share of foreign consumption transactions was 10.6%, this figure amounted to 15.7% in the last quarter of 2018. Meanwhile, internet transactional movements, for the same analysis period, grew from 5.2% to 10.7%. Regarding limitations, consumers perceive as an important factor in deciding whether to access online purchases, the distrust generated by the use of personal information and payment methods (CECE-UESS, 2018).

3.3 Foreign companies with digital platforms in Ecuador

The progress in ICT has not only involved the emergence of new technologies and applications but has also changed consumption habits and live habits, as is the case with online shopping and real-time communications through social networks (Hernández & Pinjas , 2017). It has also revolutionized the business model of various sectors of the economy, mainly public transport by Uber and Cabify; tourism, in particular hotels and travel agencies by applications such as Airbnb; the record industry by downloading music online through Spotify, Dezzer, among others; and retail by the emergence of Amazon.

The results of these new ways of doing business are not only related to the search for greater efficiency and quality of service, but also to a way of circumventing regulations or tax payments, resulting in unfair competition and an increase in informality. In view of that avoidance and evasion are problems to be solved by the tax administration, the volume that covers the e-commerce in Ecuador is partially quantified, which in turn reveals a potential collection of taxes that the Internal Revenue Service (SRI) stops perceiving from foreign companies' e-commerce without a permanent establishment in the country.

With regard to VAT, ECLAC suggests adopting the OECD recommendation, which states that it is necessary "to design a simplified system for the incorporation of non-resident companies into the VAT taxpayer register" (ECLAC, 2019, P. 79), so that they assume the fee for the service they provide to the final consumers of each country.

In the case of Ecuador, such studies are practically non-existent, which is why, through a methodology of text analysis, data mining, among other tools, a first description of the digital economy is made on two fronts. The first identifies the forms of e-commerce developed B2B, B2C and C2C and the second evidences the participation in the national market of companies that have business models specific to the digital economy, such as the use of multilateral platforms, vertical integration business models, input suppliers and resellers. It is important to reiterate that the scope of this analysis is descriptive, which prevents identifying what is the prevailing business model in Ecuador considering the variety of international companies that carry out transactions with users in the country.

3.3.1 Estimation methodology

To estimate the volume covered by Electronic Commerce in Ecuador, the International Currency Movement Annex (ICM) is used as a primary data source (administrative records), which is a compilation of approved information provided to the SRI by financial institutions. Although the use of the ICM transactional annex has advantages such as obtaining estimates over time or disaggregating information by companies and business models, it

3 Digital sales are channels that refer to the sale and attraction of customers through social networks and websites, whose transaction can be carried out in person or by electronic means. Instead, e-commerce is buying and selling goods and services online, through electronic means.

does not cover all electronic commerce[4]. Therefore, the results focus on foreign e-commerce companies without permanent establishment in the country during 2018.

Apart from the limitation of the figures, those associated to data processing are added, presented by the ICM transactional annex as: (1) non-existence of a cadastre or identifier of foreign companies with digital platforms and (2) heterogeneity in the content of the field or variable that in theory allows identification of the name of the company or person to whom a payment is made; since each financial institution registers with its own description.

To address the limitations associated with data processing, techniques and tools are used that allow automatic scaling of textual information, in order to reduce (as far as possible) human intervention that is often expensive both economically and in processing time. *Text mining* concepts are specifically applied to detect the presence or absence of a pattern in a heterogeneous text string and subsequently, those matching patterns are extracted within the variable of interest of the ICM (foreign company name) and homologated.

The second step is to perform a series of pre-processing tasks on the variable of interest. These are: removing blank spaces, converting from uppercase to lowercase or vice versa, and removing *stop words* (words that do not add meaning to the text such as articles or conjunctions).

In the next stage a preliminary cadaster is built[5] with the main foreign *e–commerce* companies, on which, a bank of words common to a company is generated (example: AMAZON-MARKETPLACE or AMAZON.COM). From the cadaster we look for the i-th pattern (word bank) within the i-th chain (company name within the MID). If the pattern is empty, the result is NA.

For the fourth step, similarity matrices are used. Specifically, we use the Jaro-Winkler method that calculates the distance between two string variables. It also modifies Jaro's standard distance metric[6] by putting an additional weight on the chain differences at the beginning of the text to be compared.(Borg & Sariyar, 2019) Mathematically, the Jaro-Winkler distance uses a prefix scalep that gives more favorable ratings to strings that match from the beginning for an established prefix length. The score is normalized so that 1 equals no similarity and 0 is an exact match.

Given two strings s_1 and s_2, their Jaro-Winkler sim_w similarity is:

$$sim_w = sim_j + lp(1-sim_j)$$

Where:

sim_j: is the Jaro-Winkler similarity for text strings s_1 and s_2.

l: is the length of the common prefix at the beginning of the string up to a maxi of four characters.

p: is a constant scale factor of how much the score is adjusted by having common prefixes. p it should not exceed 0.25 otherwise the similarity could be greater than 1. The standard value for this constant is p = 0,1.

4 Only electronic transactions carried out abroad by credit or debit card are recorded in the transactional appendix MID. For some transactions, payments are made in cash as is the case with Uber.

5 Payroll of external digital service providers. Argentine cadastre. Available from the federal administration of Public Revenue (AFIP). Recovered from http://biblioteca.afip.gob.ar/pdfp/RG_4240_AFIP_A2.pdf

6 The Jaro algorithm is a measure of common characters, which is no more than half the length of the longest string in distance. Winkler modified this algorithm to support the idea that differences near the beginning of the chain are more significant than differences near the end of the chain. Jaro and Jaro-Winkler are suitable for comparing smaller strings like words and names.

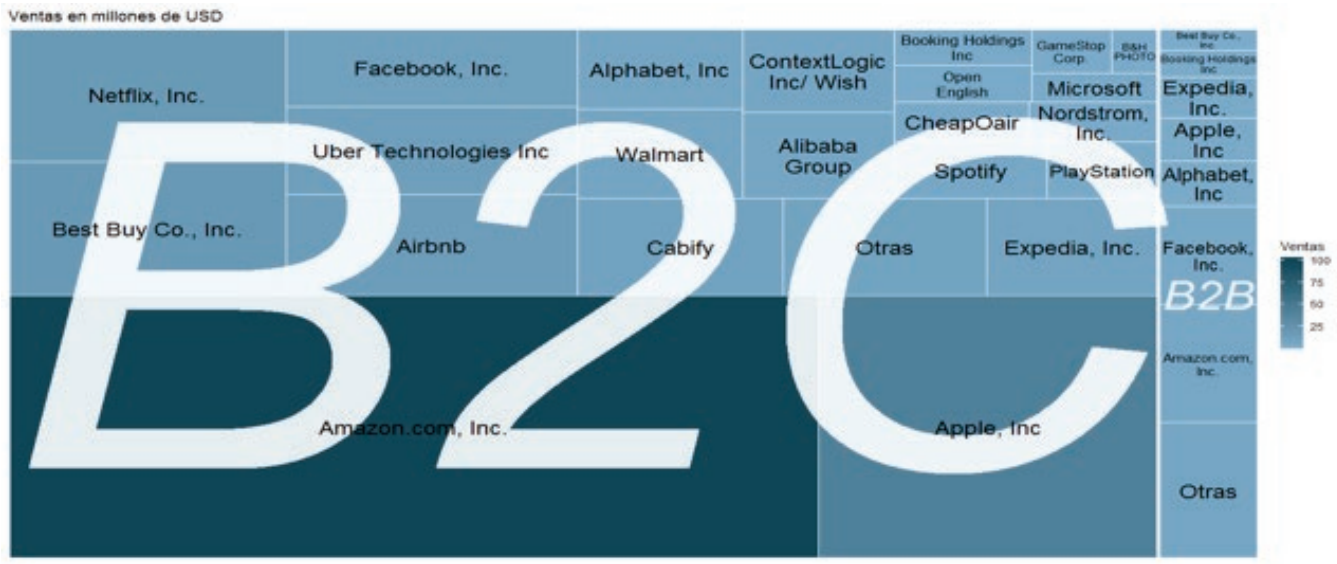
The Jaro-Winkler distance d_w is defined as $d_w = 1 - sim_w$

Based on the methodology mentioned, it was possible to identify the main companies and business models of *e-commerce* with foreign companies not domiciled in Ecuador.

3.3.2 Main results

In Ecuador, there is a group of foreign companies that use digital platforms to do business. From the work done with the methodology already explained, it can be inferred that the levels of sales and "transactionality" occur to a greater extent between companies and individuals-consumers-B2C and is lower for the case between B2B companies. Under the methodology used, it is not feasible to identify the value-adding business model used by companies as indicated by the ECLAC typology (2019). Therefore, to refer to the digital economy, the empirical evidence limits us to business models whether they are B2B, B2C or C2C.

Figure 1. Sales of foreign companies with digital platforms of the year 2018



Source: *Internal Revenue Service (Annex International Currency Movement*

Note: *Cabify has a single taxpayer register (RUC) for the fulfillment of its tax obligations in the country. The figures include branches and subsidiaries.*

Figure 1 identifies Amazon Inc. and Apple Inc. as the largest sales volume companies in the country. These companies are particularly characterized by having a vertical integration of their business models, that is, they cover all links in the production chain from the generation of inputs, production and marketing, whether their own or not, of digital goods and services. This strategy of business growth marks a limitation when generating tax strategies through taxation.

The implementation of the methodology described in this document, which considers digital media transactions between companies (B2B) and between companies and consumers (B2C), reveals a substantial improvement in the use of digital media by companies towards consumers, going from 0.06% to 0.32% in relation to the GDP during the period 2015 - 2018. B2B *e-commerce* remains constant at 0.03% of GDP. These figures suggest that, despite having a level of internet

penetration in the Ecuadorian population that borders 79.9%, commercial relations between companies and between consumers do not show, in monetary terms, a significant value in relation to GDP.

Considering the average turnover of foreign companies that sell through digital platforms, both at B2B and B2C levels, it appears that the province with the highest sales volume is Pichincha with 155,019 million dollars, followed by Guayas with 78,170 million dollars. The provinces with the lowest turnover are Napo and Orellana with $ 0.9 million and territorial planning zone 1 consisting of Carchi, Esmeraldas, Imbabura and Succumbíos with $ 5.7 million.

An interesting exercise was to show the level of sales and the number of consumers by age ranges that use *e-commerce* in the B2C mode. It was found that the highest volume of sales and users is among the population aged 30 to 34 years. In general terms, the population between 25 and 44 years of age comprises 67.1% of the population that uses digital platforms for Commerce, and they represent 58% of the total sales made by the B2C modality of e-commerce.

With regard to B2B *e-commerce*, it was possible to identify that commerce is the economic activity that has the highest concentration of sales volume, reaching the figure of 7.1 million dollars; followed by scientific activities whose sales volume is 3.9 million dollars. On the other hand, the real estate, health, transportation, and storage activities are the ones that registered a lower volume of sales during 2018.

Table 1. Sales volume of foreign companies in e-commerce B2B by economic activity for the year 2018

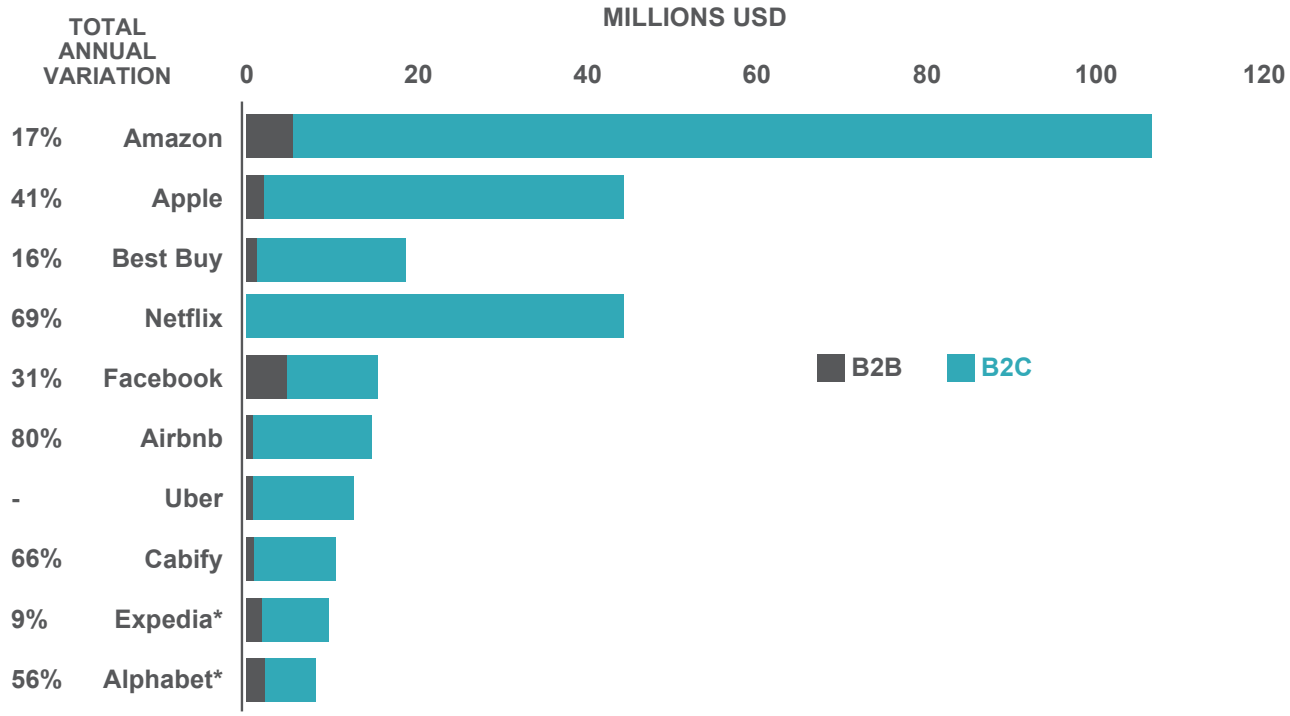
YEAR	CIIU	ECONOMIC ACTIVITY	SALES (THOUSAND USD)	THOUSANDS OF TRANSACTIONS	AVERAGE SALES
2018	G	Trade	7,115.3	98.3	72.4
2018	M	Activ. professional, scientific and technical	3,999.9	57.8	69.2
2018	C	Manufacturing	2,295.2	34.5	66.5
2018	P	Education	1,627.6	14.1	115.7
2018	J	Information and communication	1,541.0	21.7	71.1
2018	N	Activ. administrative service	1,477.1	15.5	95.6
2018	I	Accomodation and Meal Services	1,306.1	9.3	140.8
2018	K	Financial and insurance activities	950.8	7.0	134.9
2018	F	Construction	848.5	13.0	65.1
2018	A	Agriculture, livestock, forestry and fisheries	752.5	7.2	104.2
2018	S	Other service activities	713.4	9.9	72.1
2018	H	Transport and storage	572.0	9.2	62.0
2018	L	Real estate activities	571.8	5.7	100.3
2018	Q	Health	470.6	6.4	73.6
2018	O	Public administration and defence compulsory social security schemes	246.4	1.5	163.8
2018	R	Arts, entertainment and Recreation	231.2	3.3	70.8
2018	B	Mining and quarrying	84.1	1.7	49.7
		Other activities	121.3	1.5	83.2

Source: *Internal Revenue Service (International Currency Movement Annex) & Civil Registry*

After describing the volume of sales, their representativeness in GDP, participation by economic activity (see Table 1), the main foreign companies that use digital platforms to carry out their economic activities are presented below. At the level of foreign *e-commerce companies*, in 2018, 2.7% of foreign companies identified in the ICM transactional Annex are Amazon, Apple, Best Buy, Netflix and Facebook, which concentrate 65% of sales through digital platforms. This group of companies highlights Amazon whose sales in 2018 were 106.3 million dollars, showing an annual growth of 17% compared to 2017 and a share in total sales of 34% (2% B2B and 32% B2C).

These figures not only provide an overview of the market size of digital commerce in Ecuador, but also reveal a potential tax collection that Ecuador is not collecting from foreign *e-commerce companies*. In this case, they are transforming the production and marketing of goods and services. Specifically, in 2018, the potential VAT on digital services is estimated to be 14.5 million dollars (excluding Cabify that has an RUC), distributed mainly in five foreign companies: Apple, 2.2; Netflix, 2.1; Facebook, 1.8; Airbnb, 1.8 and Uber, 1.4 million dollars (see figure 2).

Figure 2. Sales of leading foreign companies with digital platforms of the year 2018



Source: *Internal Revenue Service (Annex International Currency Movement)*
Note: *Cabify has an RUC to meet its tax obligations in the country. The figures include subsidiaries and subsidiaries.*

Despite this dimension of e-commerce, in which information and measures taken both at international and national level on the different pillars of the digital economy is still scarce; it is necessary to have disaggregated information to identify the main e-commerce companies, as well as their sales on a regular basis or the business model in which they operate. In this sense, in 2017 the authors Hernandez and Pinjas (2017) make an estimate of sales in the region for four international e-commerce companies (Uber, Netflix, Spotify and Apple). However, the calculation is transversal and is subject to criticism and questioning for using total sales from other locations to estimate sales by country in the region[7].

7 From the total sales of other locations, per capita sales are calculated. These figures are scaled by per capita income relative to each country and corrected by the US CPI change to leave it in 2016 prices (Hernández and Pinjas, 2017).

4. CONCLUSIONS

The present study, although it has a descriptive scope, shows that both conceptualization and quantification of the digital economy are still in the construction phase. However, that does not exempt States from the need to measure the impact on the economy, development, and efficiency of public policies. Some reflections are derived from the analysis:

1. In the conceptual sphere, the digital economy is conceived as an ecosystem where at least five pillars are involved: entrepreneurship, support and financing, socio-economic, and broadband, and regulatory and public policy framework. In this space, economic agents, social actors, and the State play a leading role. In efforts to measure this entire ecosystem, the Inter-American Development Bank shows that Latin American economies still have shortcomings in the generation of digital infrastructure and regulatory framework that enhances the use and exploitation of ICTs.

2. At the international level, the participation of the digital economy is quite heterogeneous, showing a gap between the OECD countries and Latin America, in both digital infrastructure and business models. In particular, the business models open a door for the generation of economic benefits of agents where states have shown a limited participation of their tax administrations.

3. In order to characterize the business models that are immersed in the digital economy, although there is no standard classification, the ones used by ECLAC, IDB and CIAT were taken into consideration. From there, two forms of analysis can be identified. The first category refers to the purchase and sale of goods and services using electronic means. This is one of the most used categories and is called electronic commerce, it seeks to identify the actors involved and, in the case of the tax administration, seeks to quantify consumption for the respective taxation. The second is related to the aggregation of the value of the different business models, which would allow to generate more information about obtaining profit for taxation. Although they are non-exclusive classifications, the most used is that of electronic commerce.

4. The review of international experiences on the measures taken by the TAs, the need arises to identify a register of companies that do not have permanent establishments, and which play an important role within the digital economy, identifying the products or line of business that generate most monetary transactions. Similarly, a majority of countries have chosen to expand the tax base towards digital services; and some countries such as Mexico have introduced a tax on digital services.

5. Two central problems arise from the digital economy for TAs: with regard to the principle of source to tax VAT on digital services, e.g. how to tax consumption that takes place in a location other than the origin of the transport service (s) through foreign digital platforms. The other difficulty is related to the permanent establishment of the economic activity that obtains the benefit, since companies in the digital economy do not need to have a physical presence to carry out their economic activity.

   However, the problem is partially solved by establishing a supplier register for those companies where services are physically delivered as in the case of the transport sector (Uber) and accommodation (Airbnb). Although this theoretical solution may be complex to implement, it is no different from other cases of evasion by informality or because transactions are made in cash and without the issuance of an invoice or sales voucher.

In cases where the service or good is delivered in virtual form, a possible solution is to apply the tax at the time of purchase and require its withholding by the person who executes the payment, in this case, through the institutions of the financial system. The problem, at least in Ecuador, is that from the ICM annex it is not always possible to identify the nature of the service or product being purchased (to know which tax to apply) or the place where the purchase was made, this making difficult, as ECLAC points out, to tax through income tax the companies that use digital platforms for business models that are value aggregators. For example, those of vertical integration or multilateral platforms.

6. In Ecuador, since 2018, 183 foreign companies have been identified that do not have permanent establishment and that together generate consumption of USD 312.2 million, a figure representing 0.29% of GDP and a potential VAT collection for digital services of USD 14.5 million. In addition, in the same year of analysis, 2.7% of foreign companies identified in the ICM (Amazon, Apple, Best Buy, Netflix and Facebook) accounted for 65% of sales through digital platforms.

7. The development of the digital economy in Ecuador is still incipient. While progress has been made in the digital infrastructure over the past fifteen years, the permeability of ICTs in financial systems and production processes is low, even in relation to the average in Latin America. At the institutional level, the Ministry of Telecommunications is identified as the governing body of public policy related to ICT, which through its Strategic Plan 2018-2021 seeks to obtain a cadastre of digital platforms that have a share in the digital economy. This institution could certainly be a strategic ally for the TA.

8. While the figures presented on the revenue and potential collection of VAT from e-commerce by foreign companies that have no tax domicile in Ecuador provide an overview of the market size of the digital economy in the country, these may be underestimated by the fact that the estimates are based on the construction of a preliminary cadastre of foreign companies.

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TAX REFORM
in the Republic of Paraguay

Oscar Alcides **Orué Ortíz**
Lilian Raquel **Román Florencio**

SYNOPSIS

This paper addresses in a general way the Tax Reform carried out in the Republic of Paraguay in 2019, through the enactment of Law No. 6,380/2019 *"On Modernization and Simplification of the National Tax System",* highlights the objectives of the Reform, the main characteristics of each of the taxes and the boost to direct taxes in the country, without changes in tax rates.

CONTENT

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INTRODUCTION

Law No. 6,380/2019 *"On Modernization and Simplification of the National Tax System"* is the product of a true public-private partnership in a context of sustained growth in the Republic of Paraguay in recent years, despite the unfavorable regional situation and the uncertainty worldwide regarding issues that inevitably affect the economy of a country, even more so considering the geographic location and landlocked nature of Paraguay.

Law No. 125/1991 has been the backbone of the national tax system for more than twenty-seven years. Over time, said Law has undergone numerous modifications and extensions, which were in turn regulated through various administrative resolutions, making it more complex in its application every day.

In 2018, the task of the **Technical Economic Tax Commission (CETET)** officially began, which was first created through Ministry of Finance Resolution Nº 231 of July 4, 2018 and later updated through Resolution No. 137 of November 16, 2018.

The establishment of this specific Commission was carried out with the understanding that tax modernization and simplification was not a simple task and should be approached in a broad and inclusive way, with specialized representatives of the public and private sectors, within the framework of recommendations and good practices of the Organization for Economic Cooperation and Development (OECD) and the commitments assumed as a country before the various international organizations in matters of transparency and international tax cooperation.

The CETET was chaired by the Minister of Finance, under the coordination of the Vice Ministers of Taxation and Economy, and made up of representatives of the Chambers of Senators and Deputies of the Honorable National Congress, tax specialists, former Ministers of Finance, as well as domestic and foreign tax specialists; representatives of the private sector and public accountants, appointed by their peers.

The task entrusted to the Commission was the review, adjustment, and update of the country's Tax Law, with a view to streamlining it and ensuring that it responds to principles of equality and tax equity.

On May 9, 2019, the Executive Branch submitted the Draft Bill *"On Modernization and Simplification of the National Tax System",* to the consideration of the Honorable Chamber of Senators of the National Congress and as of that date, the difficult task of monitoring the debates on the proposal to modernize the national tax system before the National Congress and other spaces for analysis and socialization began, along with events to present the draft bill in the countryside, in seminars and workshops intended for the general public, taxpayers in particular, opinion formers, as well as teachers and students from the academic field.

On June 19, 2019, it was approved in the Chamber of Senators, with minimal modifications, and later, on July 10 of the same year, the bill was approved with modifications, so it was sent back to the Chamber for processing, and was sanctioned into law on September 12, 2019.

The Executive Branch promulgated the Law on September 25, 2019 and through Decree Nº 2,787/2019 established the validity of most of the provisions of Law No. 6,380/2019, as of January 1, 2020.

The dates from the beginning of the works to the entry into force are highlighted since the tasks of the tax reform were promoted historically and with great speed. This continues now with the challenge posed to the Tax Administration involving the regulatory and technological implementation of the law in a minimum period and the great challenges ahead.

According to the message of the Executive Branch that accompanied the Draft Bill, it responds to general objectives of modernization and simplification of the National Tax System, in order to make it more efficient, fair and equitable; looking for it to solve the weaknesses of the tax system that was in force for more than twenty-seven years in the country, and respecting the basic principles that should prevail in every tax system, but always aiming to reduce tax avoidance and evasion.

This message also points out that: *"…the tax proposal seeks to increase collection with an emphasis on equity and, therefore, on direct taxes. Consequently, it calls for deepening tax justice, but improving market competitiveness, formalizing, and supporting micro and small businesses, and strengthening middle-income families"*.

It could be noted that, in accordance with the provisions of Article 181[1] of the National Constitution, which establishes that people will pay taxes in accordance with their taxable capacity, the Law implies the principles and requirements of any modern tax system, such as:

- Greater equity (equitable rules for the various economic sectors).
- Tax justice.
- Greater competitiveness (promotion and incentive for regularization).
- Simplification of the tax system (precision and clarity in the text of the Law).
- Modernization (adaptation to good international practices concerning tax matters).

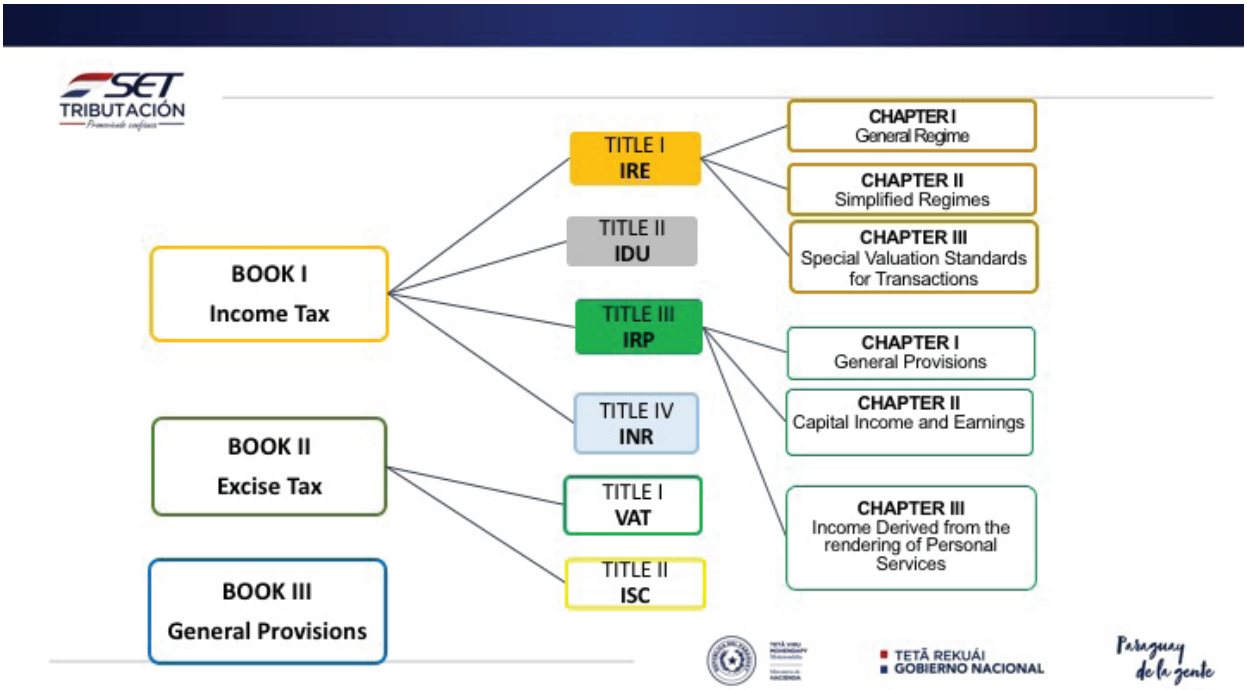
It is necessary to emphasize the fact that the Law did not increase tax rates, but it maintained the current competitiveness of the system in the market. It promotes the strengthening of small and medium-sized enterprises through simple special regimes that minimize their tax costs and allow them to become legal, with the advantages that this means for this sector of the population.

Other important points to highlight are:

- The new tax regime maintains the same amount of taxes that it had under the previous Law, both on income and consumption taxes.
- Among the Income Taxes we have: Business Income Tax (IRE), the Dividend and Profit Tax (IDU), the Personal Income Tax (IRP) and the Non-Resident Income Tax (INR).
- Excise Taxes are maintained: Value Added Tax (VAT) and Selective Consumption Tax (ISC).
- Those companies under the IRE General Regime that have negative economic results can carry them over, up to five (5) years.
- For the Selective Consumption Tax, the maximum rates are updated, but it is provided that in the first year of the Law, the rate of the goods subject to said tax will not increase; In addition, measures are established for its gradual modification, based on economic studies on encumbered assets.
- It encourages companies to regularize the distribution of their accumulated earnings, allowing them to pay a single and reduced tax during the first year of the Law.

1 **Article 181. OF THE EQUALITY OF THE TRIBUTE. Equality is the basis of the tax. No tax shall be of a confiscatory nature. Their creation and validity shall take into account the taxing capacity of the inhabitants and the general conditions of the economy of the country.**

1. STRUCTURE OF LAW NO. 6,380/2019 "ON MODERNIZATION AND SIMPLIFICATION OF THE NATIONAL TAX SYSTEM" (155 ARTICLES)



2. BUSINESS INCOME TAX (IRE)

The previous taxes on corporate income: Tax on Income from Commercial, Industrial or Service Activities (IRACIS) and Tax on Income from Agricultural Activities (IRAGRO) are consolidated into the Business Income Tax (**IRE**) in order to apply the same rules to the various economic sectors: commercial, industrial, services and agricultural, considering the particularities of each sector.

Taxpayers whose income accrued in the previous fiscal year exceeds the amount of ₲ 2,000,000,000 (two thousand millon guaraníes), approximately US$ 307,000 (three hundred and seven thousand US dollars) will pay the IRE under the general regime.

The IRE taxes all Paraguayan source income, profits or earnings that come from all types of economic, primary, secondary, and tertiary activities, including agricultural, commercial, industrial or services activities, and excluding income taxed by the IRP. The Law also provides that the income generated by assets, duties, obligations, as well as the sale of these and any increase in taxpayer's equity also constitutes a taxable event.

With the definition provided by the IRE Taxable Event Law, the tax base is broadened with the extension of the definition of "Paraguayan source" so that all income obtained by an IRE taxpayer abroad, that is not expressly

found in any of the paragraphs of Article 2 of the Law, and when the income tax was paid abroad for that income at a rate lower than the IRE rate (10%); In this case, the Law provides that such income is considered to be from Paraguayan source, so the IRE must be paid in the country for the moneys earned abroad. To eliminate double taxation, the taxpayer shall adopt the credit method established in Article 134 of the Law.

In addition, negative economic results can be carried forward in all economic sectors, for up to five fiscal years.

The IRE payment regimes are:

- General Regime or General IRE.
- Simplified for medium-sized companies. SIMPLE.
- Simplified for small businesses. RESIMPLE.
- Presumed Net Income. (Art. 19 of the Law and Art. 92 of the Annex to Decree Nº 3,182/2019).
- Net Income in International Transactions. (Art. 20 of the Law and Art. 91 of the Annex to Decree Nº3,182/2019).
- Special Regimes. (Art. 93 to 98 of the Annex to Decree Nº 3,182/2019)

Transparent Legal Structure (EJT)

As a novelty, the Transparent Legal Structures are introduced as taxpayers of the IRE General Regime, they are corporations independent of their members or beneficiaries and their assets are independent.

Transparent Legal Structures are those instruments or legal structures used as a means of investment, administration or safeguarding of money, assets, rights, and obligations. These structures will be considered to have a neutral tax effect on the IRE, as they are an intermediary between the business subject to tax and its beneficiaries.

The neutral effect materializes in the fact that the income, costs, and expenses that the EJT recognizes are considered in the assessment of the IRE beneficiaries.

The EJT beneficiaries are those designated as such in the contracts of trust businesses, equity investment funds and temporary mergers.

The following are included as Transparent Legal Structures:

1) The Trust Businesses created under Law Nº 921/1996.
2) The Equity Investment Funds created under Law Nº 5452/2015.
3) Temporary mergers originated under shared risk contracts, excluding consortia formed to carry out public works.

In the case of temporary mergers, Article 11 of the Annex of Decree Nº 3,182/2019 indicates what will be understood by these and refers to a brief description of the following: sharecropping, consortia, capitalization contract for fattening or wintering and the corporate rural contract, among others.

Regarding the detailed report of the operations and transactions carried out by the EJTs, they must annually deliver said report to their beneficiaries, so that that the beneficiaries can appropriately address tax treatment of income, costs, and expenses.

3. IRE SIMPLE

The Simplified Regime for Medium-Sized Enterprises (**SIMPLE**) is intended for Single-Person Enterprises, undivided successions of the owners of these companies and private entities and companies of any nature, with or without legal status, who carry out activities taxed by the **IRE**, who may opt for this Regime, when their income accrued in the previous fiscal year do not exceed ₲2,000,000,000 (two thousand millon guaranies) approximately US$ 307,000 (three hundred and seven thousand US dollars).

Taxpayers who pay the IRE for the SIMPLE will assess their net income on the basis of actual or presumed, whichever is lower and apply the single rate of 10% (ten per cent) on it.

Annual gross income shall be deemed to be the sum of the amounts accrued during the fiscal year for sales of goods or services, excluding VAT, recorded in the corresponding book.

SIMPLE taxpayer will pay the Tax annually and the fiscal year will coincide with the calendar year, so the birth of the tax obligation will be configured on December 31 of each year. The filing of the tax returns and the payment of the resulting tax must be made within three months after the end of the fiscal year.

As highlights of the **IRE SIMPLE**, we could mention:

- The criteria for the allocation of income and expenses will be that of what is accrued during the fiscal year.
- Negative results in SIMPLE are not subject to compensation or carry-over in subsequent fiscal years.
- Single-person companies that pay the IRE through SIMPLE are not taxpayers of the Dividend and Earnings Tax (IDU).
- The following entities will be able to pay using the SIMPLE Regime as long as their income does not exceed ₲2,000,000,000: neighborhood commissions, school cooperators or School Cooperation Associations, the Catholic Church and other religious entities recognized by the competent authorities, as well as the Joint Productive Units (UPC) (Art. 77 of the Annex to Decree Nº 3,182/2019).

4. IRE RATES

The rate of the IRE RG and the IRE SIMPLE is ten percent (10%) of net income.

The net income will be determined by deducting from the gross income the expenses that are necessary to obtain and maintain the producing source; represent a real outlay; are duly documented and, where appropriate, have made the withholding; and it is not at a price higher than the market price, in cases where the transaction must be documented with a self-invoice.

5. IRE RESIMPLE

The Simplified Regime for Small Businesses (**RESIMPLE**) is intended for single-person companies engaged in IRE-taxed activities, who may opt for the RESIMPLE when their gross income accrued in the previous fiscal year is equal to or less than ₲80,000,000 (eighty million guaranies), about US$ 12,300 (twelve thousand US dollars) approximately.

Single-person companies such as fast food restaurants, grocery shops, hairdressers and small merchants, among others, must register with the RUC for the commercial activity they carry out and may opt for **RESIMPLE**.

Those registered in said regime must issue the RESIMPLE Ticket, in which they will complete only the date, buyer identification and the total sale amount. The taxpayer can approach a printing press enabled by the SET and request the printing of said document, also this request can be made through the Marangatu System, with the confidential access key.

The RESIMPLE Ticket issued by an IRE RESIMPLE taxpayer will be deductible from income taxes for the buyer, in accordance with the provisions of the Law.

Another advantage offered by RESIMPLE is that sole-person companies that pay under this regime are not VAT contributors and are therefore not required to file the monthly VAT return, which greatly reduces the tax cost of formality to this sector of the population.

RESIMPLE taxpayers will file a single annual return in February and will pay a fixed amount on a quarterly basis, between approximately US$ 3 and US$ 12, according to the following scale[2]:

Total gross income from the previous year	Monthly amount to pay
Up to ₲ 20.000.000	**₲ 20.000**
From ₲ 20.000.001 to ₲ 40.000.000	**₲ 40.000**
From ₲ 40.000.001 to ₲ 60.000.000	**₲ 60.000**
From ₲ 60.000.001 to ₲ 80.000.000	**₲ 80.000**

Payment of the resulting monthly tax according to the total gross income of the previous fiscal year must be made in the months of March, June, September, and December of the fiscal year.

Those taxpayers who file their annual RESIMPLE return without movement, the following fiscal year, will pay the monthly amount of twenty thousand guaranies (₲20,000) approximately US$ 3 (three US dollars).

RESIMPLE taxpayers will not be required to pay income tax advances nor will they be subject to withholdings.

The objective of RESIMPLE is to simplify and facilitate the contribution of small businesses, reducing their tax burden and helping them enter the virtuous circle of inclusion and regularization. In view of the above, during the first year of the Law, these taxpayers are not liable to fines.

6. SPECIAL NORMS FOR THE VALUATION OF TRANSACTIONS

In the Income Tax Title, regulations on transfer prices were introduced in response to the modernization of the national tax system and the expectation of the Tax Administration to increase collection through clear and specific rules, without the need for creation of new taxes.

The valuation standards seek to ensure that the business planning of Paraguayan companies with their related companies abroad is carried out effectively as if they were independent parties, following the arm's length principle, according to the activities and value that these companies generate in each of the countries where its related company is located.

The validity of these regulations from January 1, 2021 will imply clear and predictable rules regarding price control mechanisms for transactions between related

2 Art. 27 Law N° 6.380/2019.

companies both at the international and national level. This, in turn, will encourage companies to carry out a review of their commercial performance, in terms of prices and taxes in recent years, so that they can easily comply with them, with the understanding that the Tax Administration could request more detail of the operations carried out among its related parties at any time.

One of the challenges of the Tax Administration in this matter is the strengthening of the process of dissemination of the Law and its application through joint seminars with the private sector and the educational community, free courses in the Tax Administration offices throughout the country, as well as in universities and colleges, through social media and the means of communication that are available to reach the largest number of people.

The points worth highlighting in this regard are:

- That the incorporation of transfer prices in Paraguayan legislation constitutes a modernization of the National Tax System.

- That it will allow to be in sync with the international community, in terms of tax legal tools.

- That it grants Paraguayan companies associated to their parent companies abroad, clear methods that both they and the Tax Administration must use to control and guarantee that the commercial transactions they carry out with their related companies abroad are carried out at market values and paying the corresponding tax in each jurisdiction.

7. TAX ON DIVIDENDS AND PROFITS (IDU)

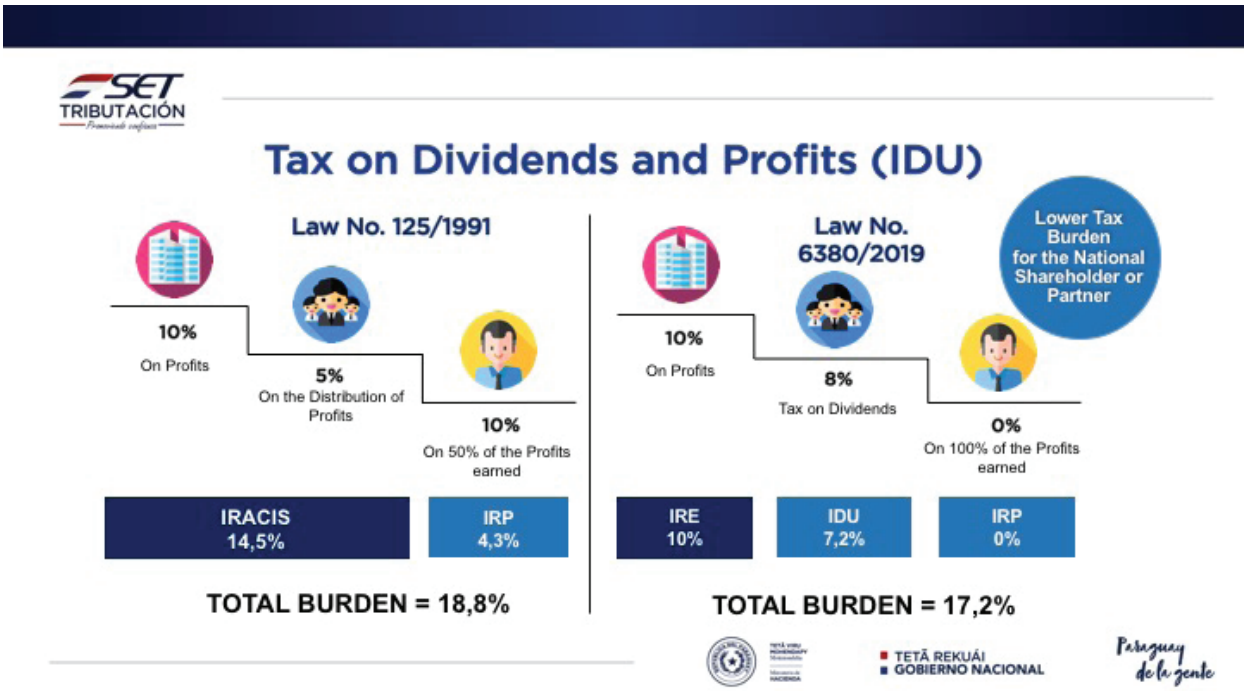
The Dividend and Profit Tax (IDU) is a tax that arises from the readjustment of an existing tax. In the previous commercial Income Tax, an additional rate was applied to the Income Tax of the company and another part was taxed under the Personal Income Tax of the partner or shareholder. For reasons of simplification, the IDU is separated from the previous form of taxation and is unified into a single tax.

The rate is **8%** (eight percent) for the national investor and **15%** (fifteen percent) for the foreigner, maintaining in the latter case the same rate that was established in the previous Law.

This tax will contribute to having a more equitable and fair tax system, taxing those with greater tax capacity, with greater transparency and information on who receives dividends, profits, or returns, or to which countries or jurisdictions they are mostly destined.

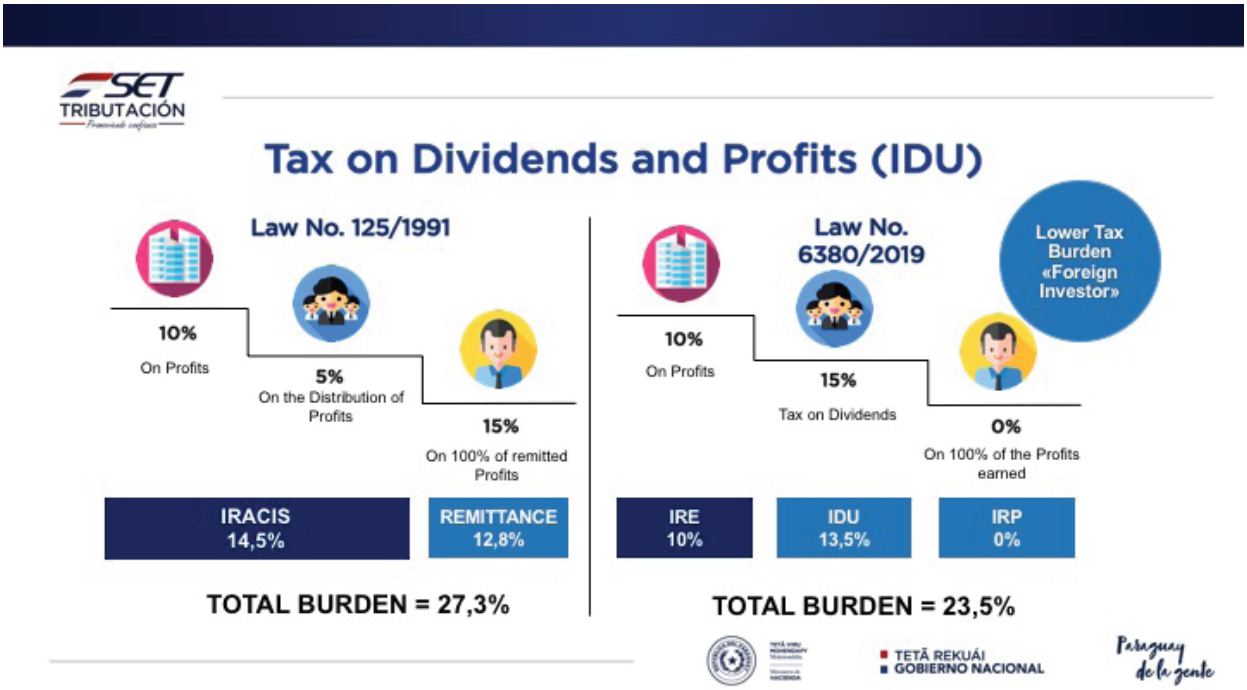
This also makes the system more competitive and attractive for foreign investors, since with the application of the **IRE** and the **IDU**, a reduction in the general tax burden will be achieved, both for the national partner or shareholder and for the foreign one.

This decrease can be seen in the fact that with the application of Law Nº 125/1991 (currently repealed) upon the national partner or shareholder receiving his dividends and profits, the income tax that was applied was equal to the sum of rates representing a nominal total of 20% (10+5+5). With the validity of Law Nº 6,380 / 2019, that same partner or shareholder will be affected with a nominal rate of 18% (10+8).



A similar situation is observed in the case of the non-resident partner or shareholder, since with the previous Law Nº 125/1991, upon receiving their dividends and profits, the income tax applied to them was equal to the sum of rates representing a nominal total of 30% (10+ 5+15). With the new rules, that same partner or shareholder will be affected with a nominal rate of 25% (10 + 15).

On the other hand, the Law promotes local reinvestment aimed at the industrialization of agricultural products, in order to boost the economic and social development of the country, with a reduction of twenty percent (20%) of the IDU rate for resident or non-resident partners or shareholders of companies that have invested in the country during the last five (5) years an amount equal to or greater than five (5) million US dollars. This means that the IDU rate is 6.4% for resident partners or shareholders and 12% for non-residents.



8. PERSONAL INCOME TAX (IRP)

Unlike the IRP under the previous Law, from the tax reform, specific and differentiated rules of tax treatment are established according to the types of income, by separating Work Income and Capital Income.

Regarding Work Income, the Law establishes that those persons who have income from ₲ 80 million per year will be taxpayers, excluding the contribution to social security and retirement, which constitutes an annual amount greater than US$ 12,300 (twelve thousand three hundred US dollars).

In order to incorporate the concept of progressivity, something so indispensable in any modern and democratic tax system, the Law introduces as a novelty the application of progressive marginal rates by independent tranches and calculated by residual amounts on net income - and not on income as done under the previous Law.

Income from dividends and profits from companies that would be considered as the IDU's generating event is no longer included in the capital income category.

A single rate of eight percent (8%) will be applied to Capital Income, maintaining consistency in the rate applied in the IDU.

9. NON-RESIDENT TAX (INR)

It should be noted with respect to this tax, that it unifies in a single title the generating event in the country carried out by non-resident persons or companies.

A rate of 15% (fifteen percent) is established and the tax bases on which the referred rate will be applied are expressly defined in the Law.

Likewise, provisions relating to digital services are expressly established, which are taxed if they are effectively used and exploited in the country, including entertainment or gambling services.

10. VALUE ADDED TAX (IVA)

Regarding VAT, the rate of 10% is maintained and in view of the important contribution of the agricultural sector in the national economy, the rate of 5% is maintained for this sector.

The 5% rate is also highlighted for basic family basket products and medicines, as well as for the acquisition and lease of real estate exclusively for housing purposes.

Although the refund of the VAT Credit to the Exporter of agricultural products[3] in their natural state and those derived from the first industrialization process (flours, crude or degummed oils, expellers, pellets and similar) is limited, the transformation of said products is still promoted, allowing the refund of VAT for the acquisition of their equipment, machinery, energy and other goods and services related to export, thereby encouraging the economic and social development of the country.

In terms of services, it is established that in the cases in which products are made available to the user or clients through the internet or any other application of protocols, platforms or technology, they will be affected by the tax only when they are effectively used in the country, for which the Law clearly and unequivocally defines the taxability assumptions. With this, they seek to promote the generation of computer services, the development of software and those that are provided through digital platforms, such as call centers abroad. If they do not meet the taxability assumptions established in the Law, they will not be covered by VAT, thus promoting the growth of the orange economy in the country.

3 Law Nº 6,380/2019. **Art.90 sec. d) par. 1 Agricultural products**: cotton, rice, oats, canola, sugar cane, barley, sunflower, flax, corn, peanuts, sesame, soybeans, un-denervated leaf tobacco, wheat, yerba mate to the scorching process, as well as the following primary derivatives: manufacture of flours, crude or degummed oils, expellers, pellets and the like.

The Law maintains the current **VAT** exemption system, also incorporating the urban and interurban public transport service for passengers, whose total round trip itinerary is not greater than one hundred kilometers (100 km). This measure will benefit the users of said transport, who are for the most part lower income families.

11. SELECTIVE CONSUMPTION TAX (ISC)

Regarding this tax, although the proposal maintains relatively competitive rates with respect to those applied by our neighboring countries, a relative increase is observed with respect to those products whose consumption has a negative impact on health.

In addition, and in order to provide greater legal security to the industries that could be affected, the Law establishes that the update of the maximum ISC rates may only occur from the first year of entry into force of the Law, and gradually, considering both internal and external economic conditions, with technical reports from the Central Bank of Paraguay and the Ministry of Finance presented to the National Economic Team.

12. CONCLUSIONS

It should also be noted that in order to protect additional income, the Fund for the Strengthening of Infrastructure and Human Capital (FOICAH) was created in the Law and provided that the additional resources resulting from the application of the Law will be used only and exclusively in investments in education, health, social protection and infrastructure.

Finally, we echo the remarks in the Foreword to the Taxpayer's Guide, published by the State Undersecretariat of Taxation in March 2020, to publicize Law No. 6,380/2019 in force and its regulations, which states as follows:

"Paraguay advances on the path toward modernization and simplification of the National Tax System and through Law Nº 6,380/2019 we want to facilitate citizens' compliance with their tax obligations based on their tax capacity, which is nothing more than equity and tax justice.

We are convinced that our beloved country can be better every day, with the effort and commitment of all.

This Law was the product of a consensus in a true public-private partnership materialized through the Technical Economic Tax Commission where experts in the accounting and tax area and representatives of the commercial, industrial, and service associations participated.

In addition, it was debated by political actors, who understood and supported in the Honorable National Congress the need to modify the rules, in order to give more weight to direct taxes, establish norms on international taxation and that those with the greatest tax capacity pay a little more, without directly increasing rates.

We are very careful about the contribution of each of our taxpayers and we know that people expect the money contributed to be used correctly; For that reason, for the first time in the Tax Law itself an article is included that shields the resources obtained. We make sure that all tax revenues are destined for the most sensitive areas such as health, education, and infrastructure.

We are convinced that this publication will help all Paraguayans, mainly taxpayers, accounting professionals and tax advisers, to learn more about the new tax rules that are largely modified after 28 years in our country.

Our commitment from the SET is to work with transparency, innovation, and efficiency to obtain the necessary financial resources to comply with the obligations and development of our country, trusting in the blessing of Almighty God...Óscar Orué Ortíz. Vice Minister of Taxation".

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Decreto N° 3.107/2019 «Por el cual se reglamenta el Impuesto al Valor Agregado (IVA) establecido en la Ley N° 6.380/2019 "De Modernización y Simplificación del Sistema Tributario Nacional"»

Decreto N° 3.109/2019 «Por el cual se reglamenta el Impuesto Selectivo al Consumo (ISC) establecido en la Ley N° 6.380/2019 "De Modernización y Simplificación del Sistema Tributario Nacional"»

Decreto N° 3.110/2019 «Por el cual se reglamenta el Impuesto a los Dividendos y a las Utilidades (IDU) establecido en la Ley N° 6.380/2019 "De Modernización y Simplificación del Sistema Tributario Nacional"»

Decreto N° 3.181/2019 «Por el cual se reglamenta el Impuesto a la Renta de No Residentes (INR) establecido en la Ley N° 6.380/2019 "De Modernización y Simplificación del Sistema Tributario Nacional"»

Decreto N° 3.182/2019 «Por el cual se reglamenta el Impuesto a la Renta Empresarial (IRE) establecido en la Ley N° 6.380/2019 "De Modernización y Simplificación del Sistema Tributario Nacional"»

Decreto N° 3.184/2019 «Por el cual se reglamenta el Impuesto a la Renta Personal (IRP) establecido en la Ley N° 6.380/2019 "De Modernización y Simplificación del Sistema Tributario Nacional"»

Ley N° 6.380/2019 «De Modernización y Simplificación del Sistema Tributario Nacional».

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CHALLENGES AND COMPETENCES NECESSARY

to officials of the 21st Century tax administration

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SYNOPSIS

The purpose of this paper is to present a concrete experience of using competence management system to analyse the human capacities necessary to face the challenges that are posed to the tax administrations in the changing context of the 21st century.

The experience has been carried out by Brazilian Federal Revenue Service (RFB) in coordination of the competences Mapping Workshop of the Tax Administrations of BRICS member countries – Brazil, India, China and South Africa, in the period 26 to 28 March 2019 .

The challenges presented to tax administrations in the era of the fourth industrial revolution have been consolidated, with the proposal of 59 competences which have been classified into eight groups.

CONTENT

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INTRODUCTION

The world of the 21st century and the context in which the Tax and Customs Administrations (TA) operate is changing rapidly due to digitization and transformations of industry 4.0, as well as profound economic, social, political, and industrial relations changes. The TA's concern in dealing with the changing environment and also with the growing complexity of the "tax ecosystem"[1] is reflected in the recent documents and events of the Inter-American Center for Tax Administrations - CIAT[2], the Organization for Economic Cooperation and Development - OECD and also the forum of tax administrations of the BRICS[3] countries, Brazil, Russia, India, China and South Africa.

Automation, robotics, artificial intelligence are no longer editions of science fiction. New business models, new digital interactions and new demands take place in the context of industrial relations. Will we all be replaced by robots?

There are many changes in the environment that TA operate, such as:

- erosion of the tax base resulting from technological advances,
- the elimination of physical borders and the significant increase in intangible assets, including the volume of data,
- the need for review and adaptation of the legal framework to virtual reality.

In fact, the art of tax collection and of applying the tax system depends more and more on the huge amount of data stored and processed by TA, wich demands more quality of data management and security politicies.

On the other hand, the new technologies and tools represent excellent opportunities to facilitate tax compliance and increase the efficiency and effectiveness of TA. The following can be mentioned as potential advantages: significant reduction in tax collection time, the possibility of tax checks and interventions in real time, the best quality of services provided and support for positive attitudes in tax compliance.

Following this general introduction, the second part of this paper presents the context and the challenges of tax administrations in the digital world, emphasizing the need for the development of new skills or work competences.

The third part then presents competence management as a tool to align individual competences with institutional strategies, insofar as it facilitates the adoption of strategies and also create an objective and common language in human resources practices: training and development, recruitment and selection, workforce planning, performance management, development management etc.

The main purpose of competence management in the public sector is to identify the skills and competences that are required of employees and to promote their development, to add public value and meet changing demands from society.

1 The expression "tax ecosystem" is presented in the chapter "The changing profile of tax administration" of the document: "Tax Administration (2017) Comparative Information on OECD and Other Advanced and Emerging Economies," covering the complex environment in which the AT operates: economic, legal, expectations of citizens, government agencies and regulatory bodies, third parties, internal environment (culture, structure, strategy, people, technological infrastructure), etc.

2 While the 52th CIAT General Assembly has dealt directly with the issue of "tax ecosystem management", "World Class Tax Administration – Promoting successful relationships with key stakeholders at both the national and international levels; the theme of "Technological Innovation in Tax Administrations" will be discussed in the 54th Assembly.

3 In the area of BRICS, documents have been issued and debates have occurred, so in June 2018, in South Africa, taxation was discussed in line with the next industrial revolution, regulation and taxation of virtual transactions and strategies the AT is required to implement to increase the efficiency and effectiveness of fiscal control.

The application of competence management in the public sector in many of the member countries, according to a study released by the OECD[4], has proven to be an effective measure for:

- "defining the skills and behaviors that people need to do their job well; and
- the integration of a series of key activities in the management of human resources to ensure that the organization is comprised of competent people with an effective level of productivity" (OCDE, 2017, p. 3)

The fourth part presents the results of the application of the competence management methodology in the mapping workshop that has been carried out in Brazil. Throughout the workshop, some of the challenges presented to TA have been consolidated and a list of job competences has been proposed to answer the question: What are the required competences of tax administration employees to meet the challenges of the digital world?

In particular, the presentation of the results and competences identified in the exploratory study carried out within BRICS countries is intended to collaborate with the development and training of tax professionals, as well as to contribute to technical cooperation agendas and international forums for the exchange of experiences among TA.

1. THE CONTEXT AND CHALLENGES OF TAX ADMINISTRATIONS IN THE DIGITAL WORLD

It is observed that changes in the digital world is also manifested in work relations and in human behavior at work, but also in the use of new technological tools. Human capital continues to be the competitive advantage of organizations and we must develop new competences and transform the work environment into a learning environment.

Do our administrations respond flexibly to changes in their surroundings?

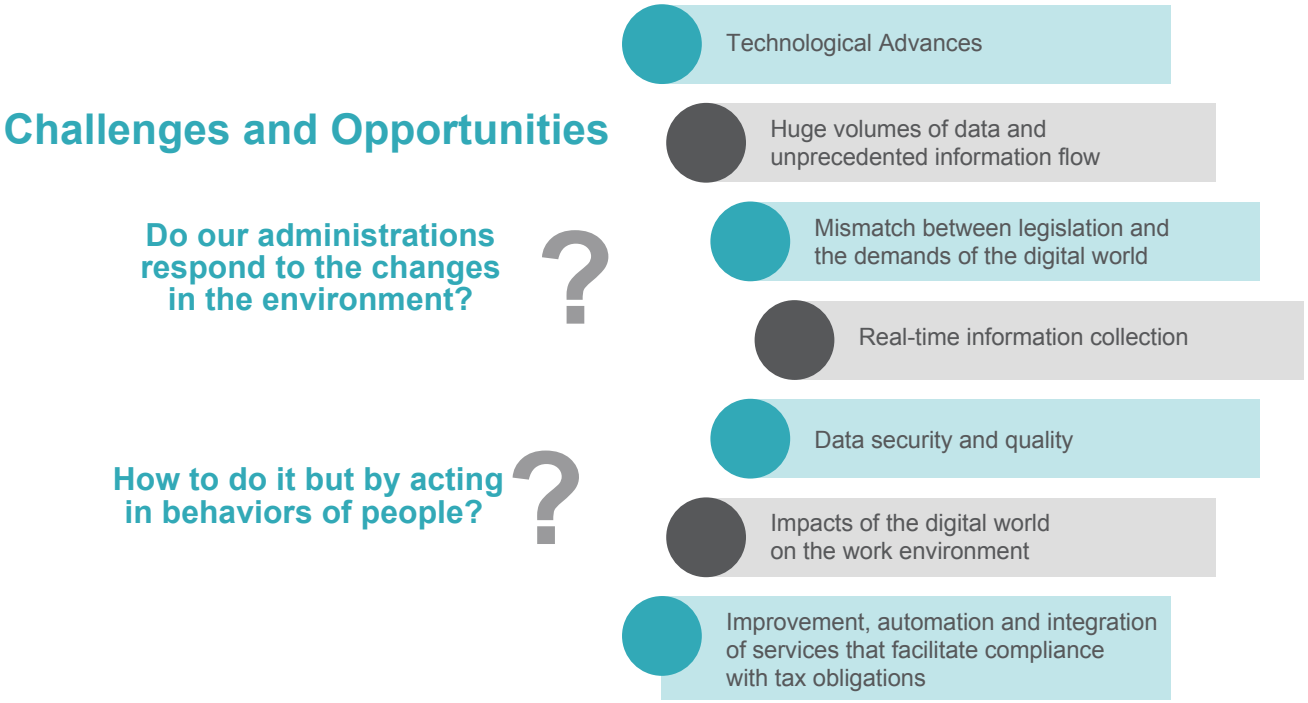
How to do it but acting on people's behaviors?

These changes in the industry 4.0 revolution are also challenges and opportunities for TA.

Lead to the need for quick and flexible responses in terms of new forms of action and new work profiles.

4 "OCDE (2010) Managing Competencies in Government: State of the Art Practices and Issuer at Stake for the future».

Figure 1. Main challenges and opportunities for TA



This new reality emerges through new technological innovations of a disruptive nature. These new technologies allow better controls and procedures, while making others unnecessary or obsolete. Among these new techologies we can mention: data analytics and "*big data*" processing; predictive analysis, artificial intelligence; "*block chains*" technology, nanotechnology, internet of things, robotics, etc.

Such as require multiple actions of tax administrations:

- **Human capital**

People who work in all the TA sectors must be comfortable with new technologies and their management to enhance the results of the activities carried out. The management of human capital is becoming more and more strategic and must come accompanied by structured change in management processes.

- **Data collection and processing**

In turn, the TA must increasingly handle a large amount of data collected and with an unprecedented volume of information flow. Meanwhile, under the new reality, information can be obtained from the taxpayer and tax collection can be performed in real time, or in near real time. On the other hand, the data received from the TA is increasingly "raw" and therefore requires greater preparation and quality and security controls. More sophisticated tools are needed to facilitate this management and increase transparency and access to data both internally and to other actors in the tax ecosystem (taxpayers, third parties, governments, national and transnational agencies).

- **Legislation**

In the legal framework, there are many changes required in tax legislation and in the international tax environment. It is not possible to continue considering only domestic laws and relationships within their own borders. Current legislation does not necessarily fit the digital and virtual environment, since fundamental elements of taxation are changing, such as the concept of permanent establishment[5], and new fiscal loopholes have been introduced in the platform of the digital economy.

- **TA's organizational structure**

Transformation to a globally connected, integrated, and collaborative administration is required, with the ability to integrate internal and external sources of information. Undoubtedly, it is a great potential to increase compliance and efficiency levels, reducing the operating costs of administration while at the same time obtaining increased performance and efficiency in the collection and assessment of taxes.

In turn, the OECD[6] also addresses the TA challenges:

"Consequently, the tax administration is focusing more on the management of the tax ecosystem, rather than focusing on operating only effective and efficient internal systems. To aggravate the challenges, these changes are occurring at the same time that the administrations are implementing important changes in international tax rules, in response to the fiscal problems surrounding new economic systems (including digital and shared economies) and taking steps to further reduce the fiscal gap". (OCDE, 2017, p. 28)

Considering the opportunities, the new technologies allow the improvement of the services to the taxpayers, which can be increasingly automated and integrated; the adoption of transparent channels of monitoring, design, development and application of tax systems that are more flexible and adaptable to changes in the environment and also an improvement in the business environment and tax compliance.

In the role of TA to guarantee the perception of risk, the development of digital technology and disruptive analytical tools applied to tax controls, such as "*big data*", artificial intelligence and "*block chain*" facilitate detection and prevention of tax evasion and fraud.

To address these challenges and opportunities, the Tax Administrations should not only rethink their work routines and new data management methodologies, but also reflect on the point of view of human capital. The new stage of the 21st century is also influenced by the impacts on the work environment and on the capacities that public officials are required to perform in very different contexts of stability, predictability and certainty that reflect the bureaucratic culture of the past.

The changing and uncertain environment in which TA activities have been carried out is the backdrop of the discussions held in the Competences Mapping Workshop by representatives of the BRICS member countries. The response in terms of human capabilities or work-related competences needed in this new context was obtained through the application of the competence management methodology.

5 Tax legislation in India introduced the concept of Significant Economic Presence (SEP) in terms of the value of local income and/or number of local users.

6 OECD. (2017). Tax Administration 2017 Comparative Information on OECD and Other Advanced and Emerging Economies

2. COMPETENCE MANAGEMENT, CONCEPTS AND APPLICATION

The competence management system has its origins in the 1970s, driven by psychologist David McClelland (1973), who introduced the concept of competence in the way it is used today to replace the concept of Intellectual quotient (IQ). For the author, assessing what this apprentice can do in a concrete situation is more important than evaluating the student's intelligence through theoretical problems. According to McClelland, since then there was evidence that school grades and intelligence tests were not predictors of professional success. What he suggests as an alternative way is to evaluate individuals for their ability to demonstrate the necessary behavior for performance. Therefore, if one wants to evaluate whether an individual can drive, it is much better to monitor him while driving than to analyze his grades in a theoretical test. McClelland used the term "competence" to name this behavior. Competences, for McClelland, would be directly observable behaviors that would prove the individual's ability to perform a specific task.

Years later, Gilbert (1978) brought the concept of "delivery" or "value" as a form of testing competences. For the author, the only way to certify competence would be observing performance, evaluating its outcome. Therefore, for Gilbert, rather than behaviors, the concept of competence would be linked to the value that the individual adds to the organization, that is, his job performance. Gilbert bases his view on the fact that, if a sculptor can make twice as many statues with the same quality and value as another sculptor, then the first sculptor would be twice as competent as the second. Observing what the first sculptor does differently and teaching the latter would be the most effective way to spread competent performance throughout the organization.

In this same line of thinking, Ramos et al. (2016) have defined the concept of competences as directly observable behaviors that are related to individual performance. According to them, the adoption of the above mentioned concept allows the identification of performance references, to avoid inaccuracies. In their work, 79 employees were asked to describe the expected performance of 18 units from where they worked, using the strategic plan and the internal regulation of their institution. Of the 191 performance references that have been described by the participants, 93% had problems, because they were overly broad, vague, and difficult to evaluate.

According to the authors, the adoption of the new competence concept in public administration reduces terminological controversies and allows the manager's work to be more accurate during the performance evaluation process. It can be said that performance is the implementation of skills acquired. The authors concluded their work by stating that, when competences are described as observable performance references, other actions of personnel management can be implemented, such as performance apprasial, training, recruitment, and selection according to this benchmark. Brandão (2012) calls this integration of people management processes as a "Competency Management Model." According to the author, the objective of the competency management model is to identify, develop and mobilize competences to achieve organizational objectives. Costa (2015) describes how this integration takes place in Figure 2.

Figure 2. Integrated competence management model

Competences as directly observable performance references provide great benefits to the training process. Botomé (1980) states that the objectives of education in any context of training should specify what professional behaviors are expected from students at the end of the process. Costa y Ramos (2015) describe how the competences, namely, the professional behaviors expected of the employee in his job could support the process of training in public administration. According to them, the selection of courses and other training actions that should be offered to public officials should be based on the process of evaluating the performance of competence. The performance evaluation of competence delimits the difference between the level of competence desired in the unit and the performance employees and managers observe. This gap in expectations is called the skills gap (Carbone et al., 2009; Costa y Ramos, 2015). According to Brandão (2012) and Costa y Ramos (2015), the highest competence gap levels represent the biggest weaknesses of an organization to achieve its goals. Therefore, actions to develop these competences should guide the Annual Training Plan of a public agency (Costa y Ramos, 2015) and other people management procedures.

The competence gap that underlies the training process of a public organization can also be based on recruitment and selection processes, dimensioning of human resources, and the assignment of work methods (Brandão, 2012; Costa, 2018; Costa y Ramos, 2015). Competence gaps that cannot be developed through training serve as a reference for external recruitment, opening vacancies in the public service. Based on this information, the institution could determine the ideal profile of its upcoming employers and develop means of evaluating the selection processes that are centered on behaviors that represent the competencies desired.

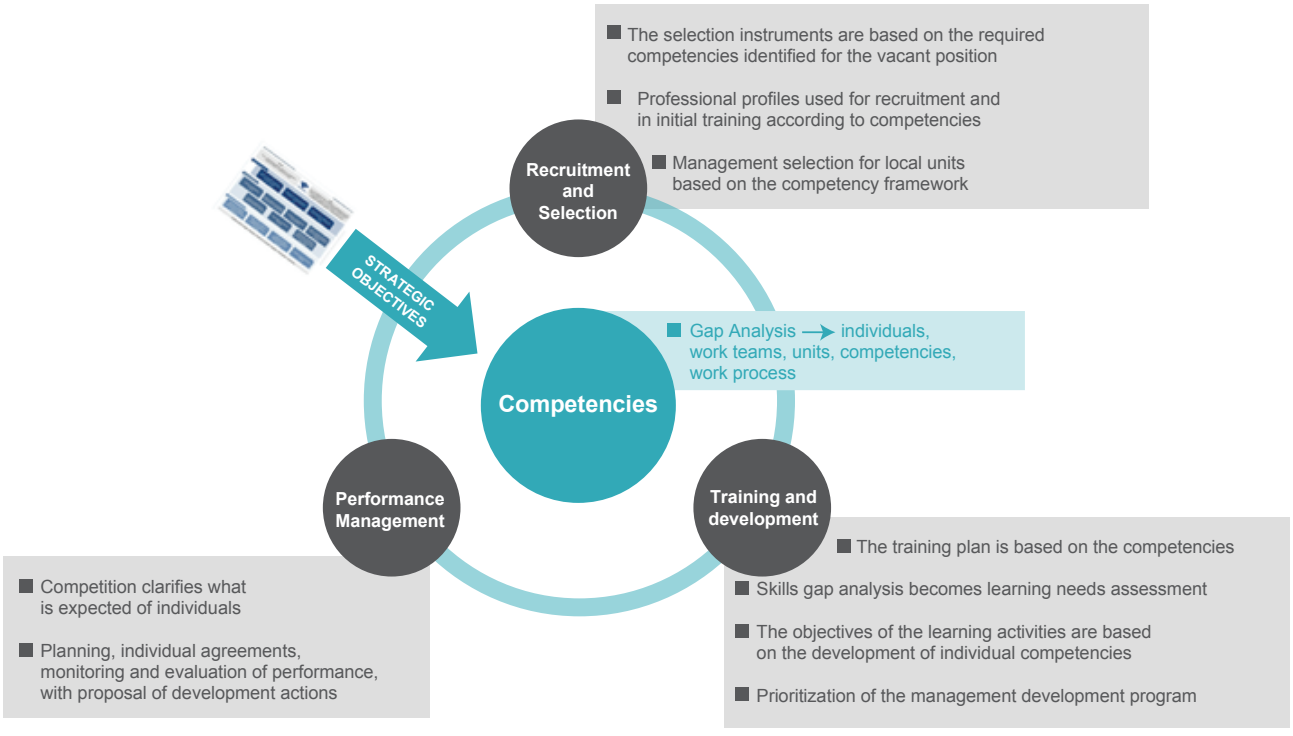
Human resources rightsizing is part of the human management process whereby offices calculate how many officials are needed in a unit to meet its objectives and goals. Therefore, if an official, with all his well-developed skills, produces a document in 30 minutes, rightsizing allows offices to say how many officials are needed if that unit needs to issue 300 documents per day.

Finally, the identification of competence gaps can support decisions related to the assignment of the person in the right place since the initial entry into the public service. If, from the very beginning, the employee works in a organization unit where his/her skills are needed, the efficiency of the selection processes and the assignment of people increases along with the motivation of the employee (Costa, 2018). Likewise, if the work competences acquired by the employees were part of a "talent bank"[7], the development of their skills can be monitored, allowing managers to invite each employee to assume responsibilities and functions that are more in line with their current and potential interests and with the needs of the institution.

In Brazil, the competency management model has been formally implemented in public administration through Decree 5.706/2006.

The Brazilian Federal Revenue Service (RFB) started implementing the competence management model since the end of 2010. The model has been improved over time and mapping cycles, assessment and development of competences have been carried out. Institutional and individual competences have been identified (Appendix No. 1), and training plans are drawn from competency gaps.

Figure 3. Example of use of the competence management model by the RFB



7 The talent bank is a tool in the management of people that allows the employee to monitor the development of new skills. The bank facilitates the compilation of competences, as they are indicators of individual talents, and facilitates the making of managerial decisions with respect to the assignment of people according to the competences and the interests of the institution. Therefore, as the employee certifies that he has new competences, his responsibilities can be revised to align with his current interests, provided this is in keeping with the needs of the institution.

3. NECESSARY COMPETENCES FOR TAX ADMINISTRATIONS TO FACE CHALLLENGES AND SEIZE OPPORTUNITIES

3.1 Context

Faced with the current scenario, many are the questions that arise, such as:

What kind of professionals are required in tax administrations to face the changes in the digital world present and future challenges?

Are our staff up to date with new technologies to get the most out of them?

Are the people recruited today still creating competitive advantages for the future?

This concern arises in the new work environment which brings the need for new forms of competence development. Much has been discussed, also at the government level, about how to manage human capital in a world where thousands of jobs are eliminated every day as a direct result of technological advances.

The FAT / OECD[8] document states that *"The Tax Administration needs to embark on a journey of significant change, reinvention and transformation".*

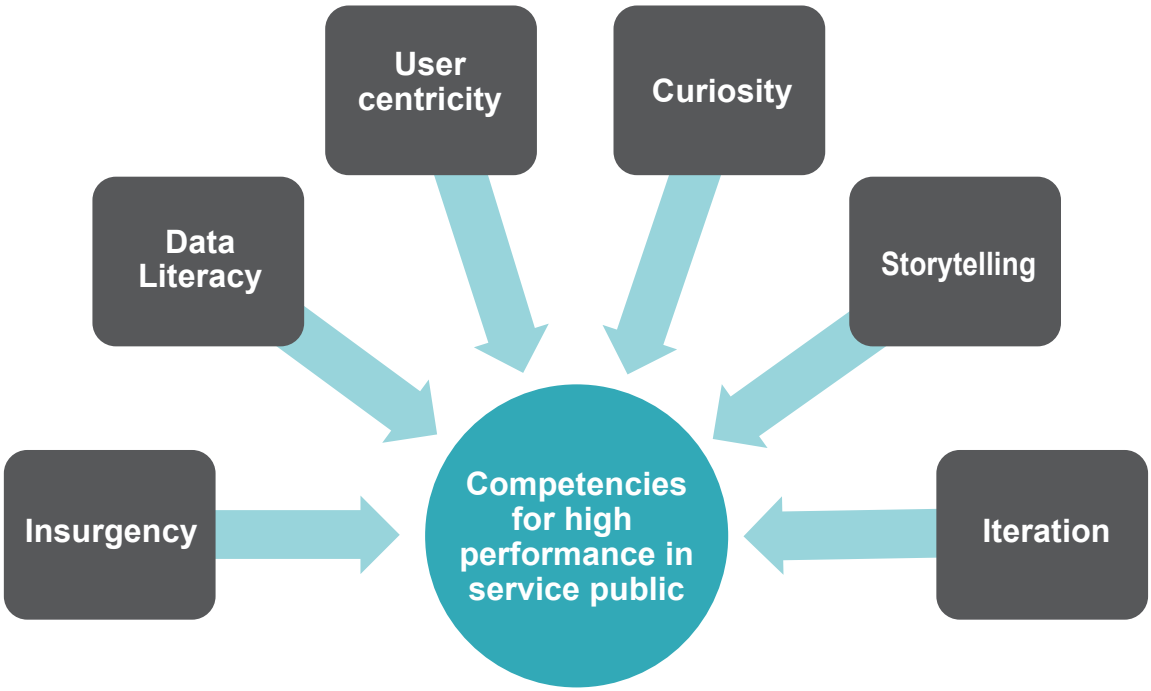
This OECD concern has still been reflected in the document "Competencies for high performance in the public service"[9], which points out the key competencies for public sector innovation. Six sets of competencies necessary for public officials to support increasing levels of innovation in government agencies have been proposed:

- "**Insurgency** means challenging the *status quo* and the usual way of doing things, it means working with different collaborative networks to gain new knowledge or deliver projects.
- **Iteration** consists of using incremental, often rapid, approaches in the development of a project, product, or service, while reducing risks. Prototyping, testing, and experiments can help identify the best solution.
- **Data Literacy** means that wherever possible, decisions should be based on data, not hunches or assumptions. Data is not just for "*geeks*", also those who are not experts in information technology must understand its importance.
- **Storytelling** is about communicating in an ever-changing world, "telling the story" of change helps build support and engage people by talking about the past, present, and possible futures.
- The **user centricity** is about providing services and designing policies to meet the needs of users, so that they are considered at each stage of the process.
- **Curiosity** and creative thinking help identify new ideas, new ways of working, and new approaches. It can mean something new or adapt someone else's approach". (OCDE, 2010, pp 125-135)

8 OECD. (2017). Tax Administration 2017 Comparative Information on OECD and Other Advanced and Emerging Economies.

9 OECD (2017). Public Governance Reviews. Skills for a High Performing Civil Serving. The future competencies presented in the report have been considered in the analysis of documents by the participants of the Skills Mapping Workshop.

Figure 4. Competencies for high performance in the public service (cf. OCDE, 2010, p. 124)



The logic of the competence management model allows the adaptation of professional profiles to new situations after changes in the environment. It is a more flexible and dynamic way of managing people. That does not focus so much the attention the pure characteristics of the job position, but about the characteristics of human capital to fulfill the strategic objectives and institutional missions. Jobs are being replaced very quickly by new jobs. There is a move to a new way of working, where the required skills are less and less operational and more intellectual, known as "*soft skills*". New skills are increasingly associated with behaviors that cannot be executed by machines.

3.2 Competences Mapping Workshop: methodology and results

To deal with the specific aspects of the competences required for TA in the changing scenario of the digital age, in March 2018, the Competences Mapping Workshop in the field of ATs of the BRICS was held in Brazil, under the coordination of the Brazilian Federal Revenue Service, with the following objectives:

- Identify the main competencies necessary for BRICS TA officials to face the challenges of the digital world
- Disseminate the competences mapping techniques that are used in the RFB and can be used in other tax and public administrations

Delegations from South Africa, Brazil, India and China have participated, with the global and strategic vision profile of the AT's actions, and the work has been developed in four stages:

Phase 1. Documental analysis

Before conducting the workshop, the coordination team has selected a set of documents that discussed the challenges of the Tax Administrations and others

that deal with future competences in the Public Administration. From these documents, preparatory texts were produced that have been presented at the beginning of the event and a set of preliminary competences for analysis by the delegations during the workshop.

Phase 2. Identification of challenges

In the first part of the workshop, with the delegations, it was presented to the participants the environment and challenges identified in the preliminary analysis of documents described in the phase described above. After the presentations, working groups have been formed with the task of identifying in each one of them, up to four main challenges of the digital world for TA, considering the experience of participants and the documents that have been analyzed. The "design thinking" methodology has been used, according to which the records of each challenge proposal are written on a "post-it," starting with the individual proposals that are pasted on a blackboard. Thus, each group visually identifies the similar proposals of its members, which facilitates consolidation, and chooses four main challenges, which are presented to the other groups. The same consolidation strategy is applied to the results of each of the groups, so that at the end of phase 2, with the participation of all the groups, five main challenges have been chosen that best represent the performance environment of the TA. The groups have consolidated the following challenges:

1. How to prepare people to face challenges in a **collaborative and integrated** way?

2. How do you deal with the **huge amount of information**, the growing need for risk management and data analysis?

3. How to enable taxation and **auditing of digital transactions**, considering national and cross-border operations?

4. How to develop technological resources and provide **services from the taxpayer's point of view**, facilitating tax compliance?

5. How to manage the **fiscal ecosystem**?

Phase 3. Identification of competences

Next, participants were organized again into groups and were assigned the task of identifying the competencies that the Tax Administration needs to face the five challenges established in the previous phase. This stage began with a presentation on methodologies to describe competences. The objective was to define the competences objectively. The use of the term "competence" with imprecise criteria can easily lead us to think of subjective, internal, unobservable abilities / talents. Therefore, competence was defined as the observable and measurable behavior performed by individuals in their work environment, related to the achievement of the strategic objectives of the organization. In this case, the strategic objectives of the TA are set out in the challenges.

Three important elements have been highlighted for the description of the competences:

1) **selection of verbs** that refer to observable behaviors and objects;

2) **description of the competence condition**: restrictions or any other factor that indicates the circumstances under which the professional is supposed to demonstrate the specified performance;

3) **description of the quality criteria of the competence**: expected quality standard or level of excellence. By attempting such elements, a competence description is more likely to produce high-quality downstream management actions, such as defining training needs, evaluating performance, measuring the workforce, planning the onboarding of new workers.

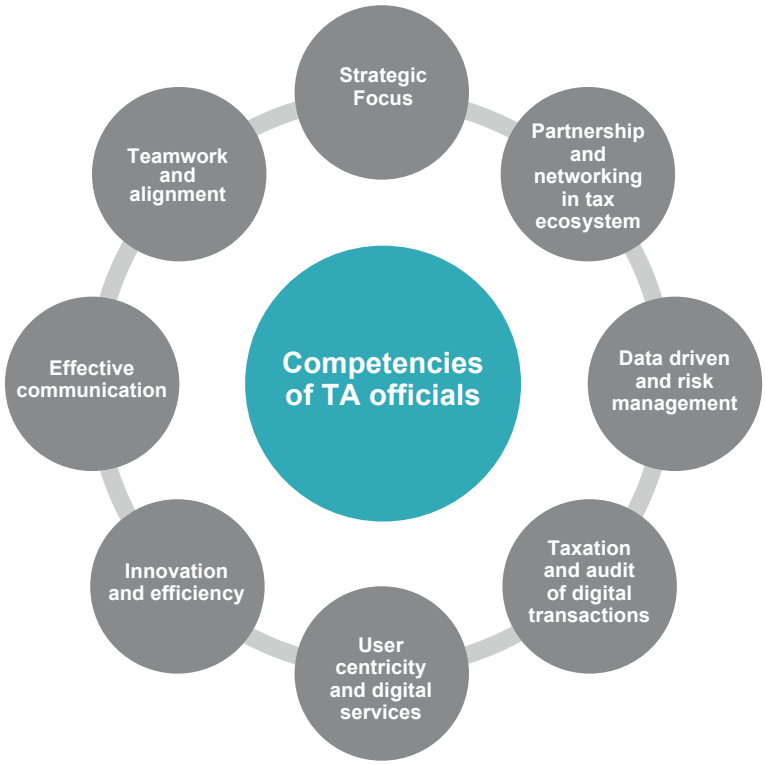
Under the supervision of the workshop coordination team, the competences have been proposed by each group and then presented to the others so that all participants could choose the ones that best represent the profile of the TA official to face the challenges presented.

Phase 4. Validation of competences

The results of the workshop were sent in a technical report format to all delegations 60 days after the conclusion of the workshop. Each delegation could reevaluate the result and submit suggestions for improvements. After validation, the report has been officially sent to the BRICS member countries.

As a result of the consolidated challenges, the main competences necessary for TA officials to face the main future challenges, many of which are already present in the reality of many administrations, have been identified in the workshop. The competences that have been identified are presented below, classified into eight groups.

Figure 5. Competency groups identified in the workshop



GROUP 1. Strategic focus

1. To iterate strategy based on suggestions and discussions among contact points.

2. To break down the strategic goals into actions in a collaborative and integrated way.

3. To identify challenges, requirements and update progress by contact points including changes when necessary.

4. To evaluate the results and work processes using indicators and established metrics in order to correct directions and continuous improvement.

GROUP 2. Partnership and networking in tax ecosystem

1. To identify the contact points and partnerships required to achieve the goals considering the big picture of the situation.

2. To establish and maintain productive working relationships across and beyond government agencies.

3. To work collaboratively across boundaries, sharing information among government agencies and bringing stakeholders as part of the solutions.

4. To disseminate experiences and lessons learnt in order to promote a collaborative environment and virtual networks.

5. To analyse the usefulness of data through global support networks, considering inter and intra-organizational cooperation.

6. To build networks of support and cooperation with stakeholders.

7. To establish agreements with individuals and organizations, using negotiation techniques within legal limits.

8. To improve collaboration among countries and agencies in order to collect and share the desirable information considering international agreements and treaties.

GROUP 3. Data driven and risk management

1. To identify required information from third parties, evaluating and formalizing the format and frequency of the request in order to ensure minimal compliance cost and ease of information sharing.

2. To quickly identify the impact of new business of the Digital World and new technologies in Tax Administration operations, such as Robotic Process Automation (RPA), Artificial Intelligence (AI), among others.

3. To conduct research on data collection methods focused on the effectiveness of tax administration and the improvement of the business environment.

4. To determine which parameters are likely to improve the collection of tax revenue to fund the work of government.

5. To maintain secrecy of the huge amount of data at hand and ensure that the data is used for tax purposes only, using artificial intelligence, big data analytics and sophisticated tools.

6. To use data analytics tools in making decisions and problem solving, avoiding assumptions, opinions, hunches and guesses.

7. To analyse multiple sources of data received from tax payers and third parties, identifying emerging patterns.

8. To filtrate data using risk parameters to ensure that only useful data are disseminated to the concerned tax officer.

9. To prioritize tasks, using risk management methodology.

GROUP 4. Taxation of digital transactions

1. To propose adjustments in the tax laws when necessary to adapt it to the digital economy dynamics.

2. To propose effective up-dating of the accessory obligations in data collection to the auditing area in order to simplify compliance.

3. To identify virtual transactions resulting in commercial gains in on-line environment for taxation purposes.

4. To identify the financial flows to avoid tax evasion using data analytics.

5. To identify legal loopholes of the different transaction of the digital economy that may be explored by the companies for tax avoidance.

6. To identify the several Businesses Models and their underlying transaction components within the digital economy.

7. To identify the real taxpayer and responsible person in a digital transaction by analyzing correctly their business model.

8. To plan audit considering new manners of doing business.

GROUP 5. User centricity and digital services

1. To assist authorities in the simplification of tax laws.

2. To provide clear and adequate responses to taxpayers and other users in order to enhance voluntary compliance.

3. To educate the taxpayers about their tax obligations by means of publicity and educational programs.

4. To interact with taxpayers showing high-level of social and interpersonal skills in relationship.

5. To interact with the taxpayer in an effective manner using technology in order to meet society's and taxpayer's expectations.

6. To draft a service charter specifying the obligations of the taxpayers, tax professional, and tax officers.

7. To continuously stay abreast of technological advanced by assessing and re-assessing whether the public services have been met.

8. To use on-line technology to provide all time availability of the tax laws and forms.

9. To facilitate compliance with tax obligations prioritizing the use of different electronic and automatic means, such as pre-filled tax returns.

10. To identify citizen's needs by improving participative approaches, which involves users experience in developing and monitoring systems or Apps to better deliver taxpayers services.

11. To Identify capacity requirements to deliver public services in digital eco-system.

12. To work together with taxpayers and third parties in the definition of acessory obligations and respective means of compliance.

GROUP 6. Innovation and efficiency

1. To develop an agile way of working, involving users at all stages of innovation projects.

2. To propose collaborative and integrate solutions for emerging problems, considering the big picture.

3. To propose new ideas and practices to be adopted in order to anticipate possible problems, applying innovative solutions to make organizational improvements.

4. To use tools, such as hackathon and design thinking, to contribute to an innovative environment.

5. To use new technologies such as Artificial Intelligence, Robotics, Cognitive Computing among others while performing daily activities.

6. To use institutional resources in accordance with transparency, efficiency, and effectiveness principles, seeking to reduce operational cost.

7. To develop mechanisms to enhance accountability of tax officers enhancing the efficiency of the ecosystem.

GROUP 7. Effective communication

1. To communicate clearly and effectively, making use of digital channels and interpersonal interactions.

2. To communicate fairly and transparently with the partners, establishing an environment to improve the dialogue and relationships.

3. To use storytelling, interactive tools and methods, as storybooks, to better explain relevant issues and changes at work.

4. To develop examples and stories which make it easier for taxpayers to understand about tax obligations.

5. To use proper language considering the audience or situation.

GROUP 8. Teamwork and alignment

1. To discuss goals establishing responsibilities of team members to achieve them.

2. To accept and take on other people's opinions, ideas and thoughts, reviewing positions and being open to receiving feedback.

3. To implement teamwork focused on common goals and conflict reduction.

4. To identify the right partnerships and appropriate tools for teamwork, considering the technological, political and sociological environment.

5. To solve problems and conflicts in a collaborative and flexible way, with focus in the outcomes.

6. To organize your own tasks, setting priorities and anticipating the time required to accomplish them in accordance with team goals and institutional planning.

4. CONCLUSION

What is unprecedented in the results achieved is a proposal, based on the competence management methodology, which defines the job competences expected of tax officials to face the challenges that are presented to TA in the scenario of the fourth industrial revolution. In total, 59 competences have been identified, which can be developed by work teams, since each member of the team would develop a limited set of competences necessary for performance in their job.

Likewise, the "*design thinking*" methodology that has been used in the workshops proved to be adequate to promote consensus in complex contexts. In addition to the results, the methodology provided a more agile discussion period, which will allow for more frequent meetings in the future and with less use of resources.

The challenge of initiating the construction of a common language among cultures as diverse as those of BRICS member countries was largely facilitated by the adoption of concepts and tools consolidated in the practice of skills management, particularly from the perspective proposed by Ramos et al. (2016) on the concept of competence. The Common Competence Index was reached in 3 days of the workshop. Despite cultural, economic, and legal differences among delegations, the results of the study indicate that consensus is not only possible but could also be built without significant effort. Considering the achievements already outlined by this paper, it can be said that this report is promising so that future experiences of this kind can help to establish a more common language among different TA.

Specifically, with the presentation of the competences that have been proposed after the implementation of the discussion within the BRICS, the objective is to collaborate with the development and training of tax professionals, in addition to contributing to the agendas of technical cooperation and for international forums for the exchange of experiences among TA.

However, the process of identifying competences cannot be left without review. The dynamics of business relationships and exponential technological advances will also bring new challenges that must be discussed internationally. At the same time, the development of new competences to face current and future challenges requires TA to manage cultural changes so that people are motivated to learn and adapt to the changing environment. It is necessary to ensure that digital transformations cover all sectors of the administration and are also sustainable. Officials in all departments must be comfortable with new and disruptive technologies. It is a process of permanent change in the way of controlling and facilitating tax compliance, adding value to tax administrations

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6. ANNEX

List of institutional and individual competences of the Brazilian Federal Revenue Service - RFB

1) Institutional competences

- **Revenue collection for the State** - capacity to guarantee the collection of tax revenues, providing the State with the necessary resources for the execution of Public Policies, for the benefit of society.

- **Customs control** - ability to exercise customs control in a transparent and safe manner, promoting the facilitation of the international flow of goods and merchandise, the protection of society and economic regulation.

- **Tax and customs compliance** - ability to promote voluntary compliance and provide excellent services to citizens, through integrated and comprehensive control of tax obligations and the rigorous fight against tax and customs crimes, to increase risk perception and strengthen institutional image.

- **Participation in tax and customs policy** - ability to support the formulation of tax and customs policies, through technical studies and prospective models, with the aim of promoting tax justice and the social acceptance of taxes.

- **Institutional relationship** - capacity to act in an integrated manner with national and international institutions, seeking to strengthen partnerships, exchange information and optimize efforts, with an emphasis on mediation and cooperation.

- **Organizational management** - ability to manage the organization's people and resources, through the adoption of integrated and innovative solutions that favor strategic alignment and the development of a collaborative environment, to optimize individual and institutional performance.

2) Fundamental individual competences

- **Effective communication** - it is expressed in writing and orally in a clear, objective, and accessible way to the interlocutor, using the most appropriate means and with an emphasis on mutual understanding.

- **Professional ethics** - develop its professional activities and interpersonal relationships in accordance with the rules of conduct and ethics applicable to the public service and the institution.

- **Teamwork** - perform tasks in a participatory and cooperative manner, with the aim of achieving common goals and objectives of the team and/or the administrative unit.

- **Self-development** - Identify professional and personal development needs to acquire new skills necessary for the activities developed and compatible with the objectives of the institution.

- **Creativity and innovation** - propose and carry out organizational innovations, whether at work or technological processes to improve the services provided by the institution.

- **Excellence in services** - provide quality services to internal and external clients, acting with disposition, clarity, and courtesy, in compliance with punctuality and legality.

- **Rationality in the use of resources** - use organizational resources in accordance with the principles of economy, transparency, efficiency, and effectiveness, seeking to reduce operating costs.

- **Self-management** - organize tasks and allocate the necessary time for their execution, according to the priorities and guidelines that have been established in institutional planning.

- **Self-criticism** - identify the positive and negative aspects of one's own behavior, based on the observation of one's own performance and on the feedback from colleagues and superiors at the work environment.

- **Interpersonal relationship** - interact with other colleagues respecting differences and seeking a peaceful, respectful, and productive coexistence.

3) Individual managerial competences

- **Strategic vision** - formulate effective strategies appropriate to the mission and environment of the institution, internally and externally, in the long term.

- **Dissemination** - identify and share institutional information (guidelines, values, and objectives) in the different media and available channels, to strengthen the internal and external image of the institution.

- **Representation** - represent the RFB at internal and external events and demonstrate its technical knowledge clearly, adopting appropriate posture and language.

- **Strategic orientation** - define the objectives, goals and initiatives of units and teams in line with institutional strategies, identifying needs and priorities with a focus on results.

- **Planning** - define plans, objectives, goals, initiatives and expected results in line with the strategic planning objectives of the institution.

- **Systemic vision** - makes decisions considering the integration and interdependence between work processes, sectors, and units, evaluating the impacts of actions on institutional results.

- **Work organization** - organize team's tasks, establishing responsibilities, priorities and the time needed to fulfill them.

- **Delegation of tasks** - distribute the activities under manager's responsibility, according to the unit objectives and the profile and skills of the team, to achieve efficient use of resources and time.

- **Project management** - supervise the execution of projects, programs, and actions in line with the strategic objectives and monitor the established schedule and budget.

- **Emphasis on results** - perform and manage tasks towards the achievement of institutional objectives, considering the efficiency and quality of the actions and solutions implemented.

- **Team leadership** - guide, develop and promote team integration, consistent with cooperative work relations and with respect to the opinions and experiences of team members.

- **Talent management** - distribute tasks and projects among team members considering their skills, experiences, knowledge, performance, and expectations in line with the objectives of the institution.

- **Feedback** - provide feedback to staff members on their behavior in the work environment, in a way that highlights positive traits and areas for improvement considering professional development.

- **Conflict management** - manage and resolve conflicts considering the parties involved, so that viable solutions are proposed in the institutional environment.

- **Innovation management** - stimulate innovative solutions to make organizational improvements and improve the services provided to citizens.

- **Change management** - create an environment favorable to organizational change processes and recognize the challenges and reality in performance.

- **Negotiation** - make agreements and build consensus through cooperative negotiation techniques, in a democratic, ethical, and legal manner.

- **Articulation** - build support and cooperation networks with internal and external actors to the organization to achieve common objectives.

- **Virtual team management** - manages work teams through information and communication technologies, with the adoption of appropriate standards of conduct for virtual interpersonal relationships.

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