

# Subnational Revenue Mobilization in Mexico

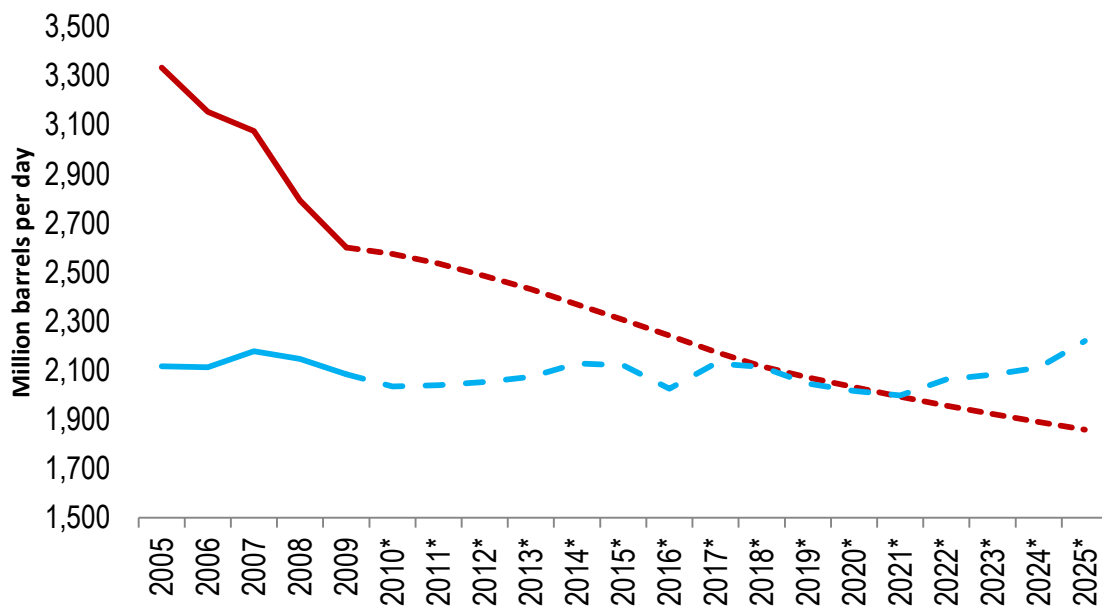
## Problem Statement

### The Mexican challenge

The decreasing trend in oil production forces us to think how to fund almost 40 cents of each peso of public expenditure that today we get from our resources of the subsoil.

With this trend in oil production and if the consumption patterns continue as today, under an optimistic scenario, by 2017 Mexico will have to import oil not as a business decision but as the only way to satisfy the domestic demand.

**Chart 1. Oil production vs. Oil consumption**

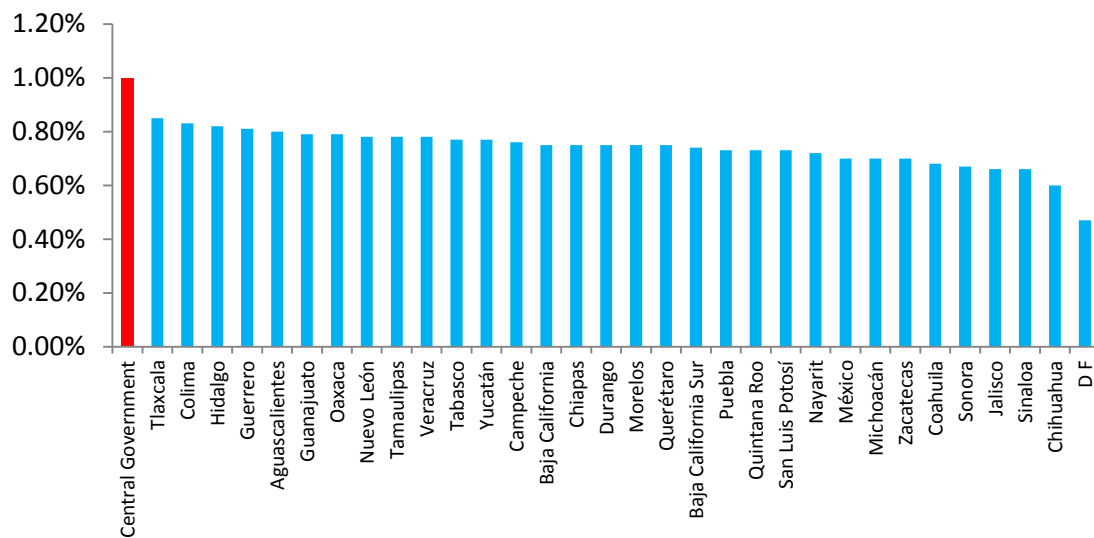


\*projected figures

Source: IMCO

Such is the importance of oil for the Mexican public finances that a decline in the barrel price will impact significantly both central government and states budgets. Chart 2 shows the magnitude of the decrease in each budget for each 2 usd of decline in the barrel price.

Chart 2. Impact of oil prices on budgets

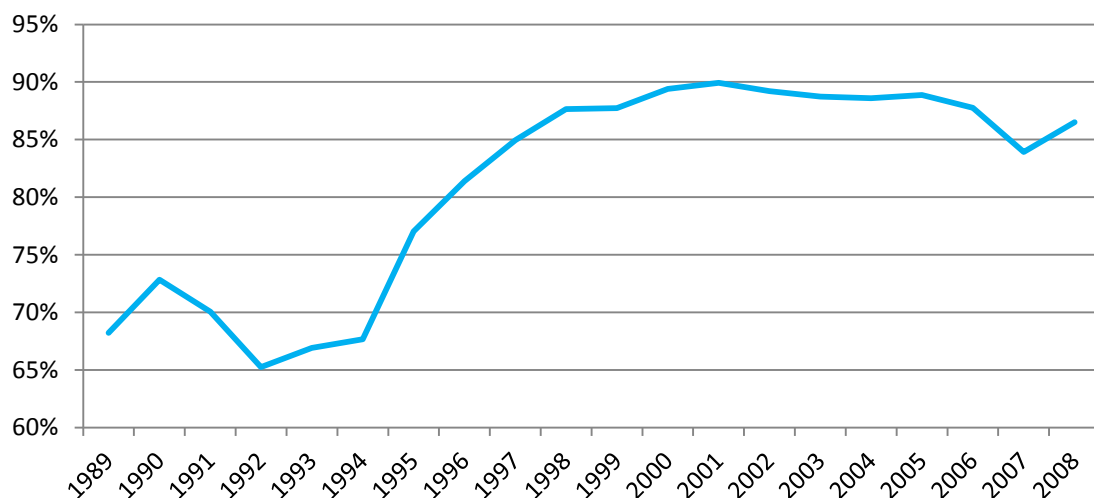


Source: IMCO

### State fiscal autonomy

Between 1989 and 2007, state level spending increased from approximately 20% of the total public expenditure to 46% of this expenditure. As a result, subnational governments became the sphere of government which controls the largest part of the budgetary expenditure, with the federal government spending 43% and municipalities 11%. However, fiscal federalism in Mexico was not accompanied by the decentralization of revenue raising faculties since in the same period the states decreased their tax collection from 32% of their total revenue to only a 10% of their total income. It is important to find opportunities to increase local revenue raising since Mexican states have become important implementers of public resources which required minimum effort from them to obtain.

Chart 3. Federal transfers to states 1989 - 2008, % of total revenue.

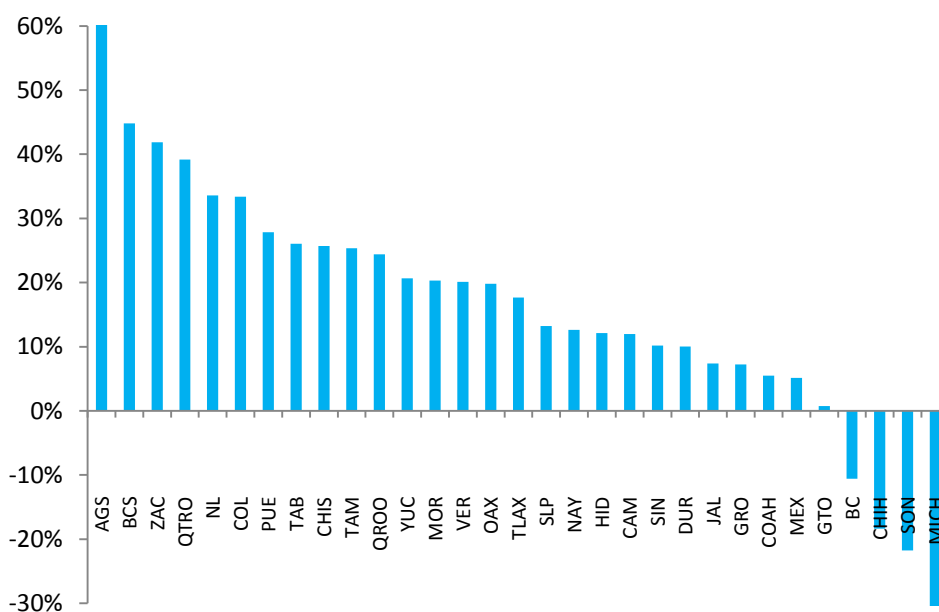


Source: IMCO using data from INEGI

Case by case, the dependence of the states on resources generated by the Central Government is worrying. With the exception of Mexico City, whose condition of financial, political and economical capital allows it to generate almost 40% of its total revenue, the rest of subnational governments carry out minimal efforts to improve their fiscal strength. At the lower end in terms of fiscal autonomy, for 2009 local revenue from Tabasco was only 2.5% of its total revenue. In comparison, 20 of 32 states obtain by their own means less than 10% of their total revenue.

Having almost total dependence on Central Government transfers has adverse consequences to state development. Among the most important are 1) vulnerability acquired by states against external fluctuations or shocks and 2) the lack of spend flexibility. In the first place, conjectural situations such as unexpected crashes in the stock market, hurricanes and earthquakes, or falls in oil revenues are hardly predictable and impact federal fiscal balance substantially. Then, the possible federal revenue contraction is transmitted directly and almost in the same proportion to state finances. Local revenues are not enough to deal with such shocks. The following chart shows the estimation errors of state revenues, which are almost totally reliant on central government transfer, situation that makes them evenly volatile against external shocks.

**Chart 4. Real revenue minus estimated revenue (% of total revenue), Average 2006-2008.**



Source: IMCO with data from INEGI and SIPE.

In second place, half of the transfers from the central government to the states are assigned to specific programs and cannot be used for different concepts than those specified on the law. Under this scenario in which most of the state budgets have been committed from their origin, the margin to allocate funds to meet particular demands of a state population, to specific infrastructure improvement or to settle financial liabilities is reduced. Also, conjectural

situations such as the ones mentioned above require attention in real time; that is flexible resources.

Aside those taxes whose collection is the exclusive power of central government, there are a variety of taxes that can be introduced into subnational governments. However, each state decides the number and the corresponding rate for each one of them, in this way determining their potential revenue and as a consequence a large percentage of their own revenues.

**Table 1: Number and taxes of each state for 2010<sup>1</sup>**

State	Number of taxes	Payroll tax	Lodging tax	Tax on lotteries	Tax on acquisition of used motor vehicles	Tax on vehicle ownership	Fun and entertainment tax	Others
Aguascalientes	7	*	*	*	*	*	*	*
Baja California	8	*	*	*			*	*
Baja California Sur	4	*	*	*				*
Campeche	7	*	*	*		*		*
Coahuila	7	*	*	*	*	*	*	*
Colima	7	*	*	*	*	*		*
Chiapas	7	*	*	*	*	*		*
Chihuahua	9	*	*	*	*			*
D.F.	7	*	*	*		*	*	*
Durango	6	*	*	*	*			*
Guanajuato	7	*	*	*	*			*
Guerrero	9	*	*	*		*	*	*
Hidalgo	7	*	*	*	*	*		*
Jalisco	8	*	*	*	*			*
México	4	*		*	*	*		
Michoacán	4	*	*	*	*			
Morelos	9	*	*	*	*	*	*	*
Nayarit	12	*	*	*		*	*	*
Nuevo León	4	*	*	*	*			
Oaxaca	8	*	*	*	*	*	*	*
Puebla	6	*	*	*	*	*		*
Querétaro	8	*	*	*	*	*	*	*
Quintana Roo	6	*	*		*			*
San Luis Potosí	7	*	*	*	*	*		*
Sinaloa	4	*	*	*	*			
Sonora	5	*		*				*
Tabasco	6	*	*	*	*			*
Tamaulipas	5	*	*	*				*
Tlaxcala	8	*	*	*	*	*	*	*

<sup>1</sup> Does not include accessories for states of Campeche, Chiapas, Nuevo León and Veracruz. Does not include state contribution for Guerrero. Does not include lags for Nuevo León.

Veracruz	5	*	*	*	*			*
Yucatán	7	*	*	*	*	*		*
Zacatecas	5	*	*			*		*

Source: IMCO with data from State Revenue Acts.

Between 2000 and 2008, tax revenue represented 42% of local revenue, while non-tax revenue (rights, land use, products, royalties, etc.) contributed the remaining 58%.

As is the case for tax revenues, non-tax revenues cover a variety of concepts and their application varies between states. Among non-tax revenues, rights (mainly for public and private transport, business or property registration, civil registration and those related to urban services) are the most significant revenue source contributing to 34% of local revenues. To a lesser extent, the rest of local income is generated by financial products and exploitation of tax penalties and surcharges.

Increasing subnational revenue raising is associated with strong political costs. An increase in the number of taxes or in their rate would result in a high electoral and bureaucratic cost that subnational governments do not want to cover, and under the current revenue-sharing arrangements, they can avoid.

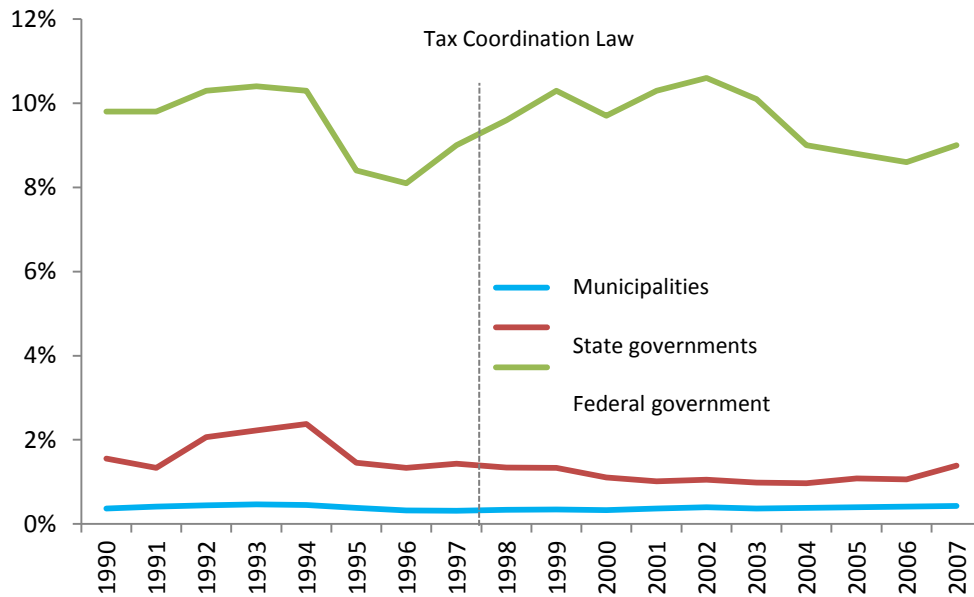
## Municipal fiscal autonomy

The Mexican situation concerning fiscal centralism has experienced ups and downs historically. In the late XIX century and early XX century, there was a greater relative importance of subnational governments, both states and municipalities, compared to the central government. In 1900, municipal revenue raising exceeded 1% of GDP, but towards 1930 and 1940, after the first National Tax Convention, revenue decreased to about 0.5% of GDP.<sup>2</sup> Municipal revenue raising has remained at this proportion for almost seventy years and is actually close to 0.4% of GDP (as is shown in chart 3). This figure is even lower than the one observed shortly before the 1995 crisis and places Mexico in the bottom relative to OECD countries, where the average revenue raising of this level of government is near 3% of GDP.<sup>3</sup>

<sup>2</sup> Díaz-Cayeros, p.37

<sup>3</sup> OCDE, Revenue Statistics 1965-2007

**Chart 5. Central Government, state and municipal tax revenue 1895-2007 (% of GDP)**



Source: INEGI, World Bank, Diaz Cayeros (2006)

Municipalities are characterized by institutional weakness, lack of economic resources, fragility of their administrative structure and lack of capable human resources.

The main sources for municipal resources are:

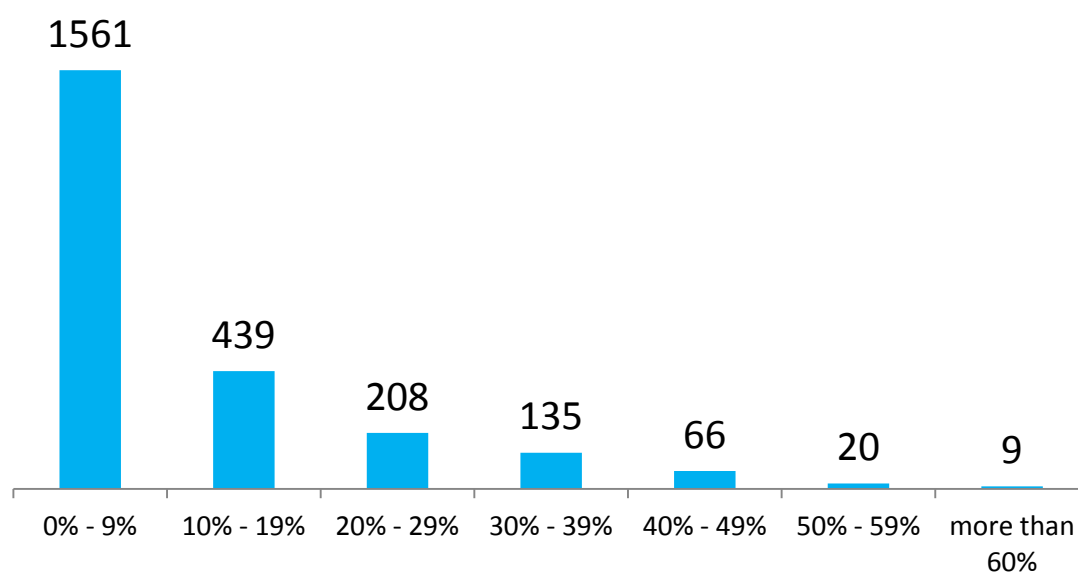
- Exploitation of capital assets
- Contributions mentioned in local laws
- Fees for the provision of public services
- Central government transfers

Regarding tax issues, municipalities do not have taxing power although some competences in this area are provided by local laws; for instances they cannot create taxes and collect them by their own but they manage what they have been commissioned by local congresses. State Revenue Acts and State Tax Codes regulate the situation of taxpayers.

Two of the pillars of municipal revenues are the property tax and water rights. Property tax accounts for almost 85% of the municipal revenues. However, property tax has low tax collection efficiency. On the other hand, water rights do not even reach 1% of total municipal revenue.

In fact, only 29 of over 2400 municipalities collect more than 50% of their total revenue, the rest depend on transfers of their states and of the central government.

Chart 6. Distribution of own revenue in municipalities (2008)



Source: IMCO using data from INEGI

Municipalities have a potential margin in revenue capacity that has not been exploited yet. It is enough to note the cases of property taxes and water rights that do not depend on central government (for example, the updating of land records and of the tap-water infrastructure). Even if not intended for it to become a source of income, water rights must cover, at least, the cost of provision. Otherwise it represents a subtraction of financial capacity for other spending targets.

Municipal tax bases are narrow and there are very few actions that can be implemented. If municipal taxing power remains unchanged, a substantial increase in tax revenue raising would have a minor effect in terms of autonomy because taxes are not a large part of total municipal revenues.

Given the limited access to funding for municipalities, the participation of debt on the total revenue composition has remained below 10% of the total revenue and has followed a downward trajectory. There is a possibility to expand the availability of resources through debt but it is important to clearly establish rules and circumstances under which debt arrangements must be made, since even among local laws different criteria are applied on debt contracting.

In both state and municipal level, the current tax bases are not enough to strengthen the subnational public finances. It is necessary to increase the tax burden so that local revenues have a significant impact on the country's public finances.

# Proposed solution

## Databases

For subnational revenue analysis and the search for improvement opportunities, the Mexican Institute for Competitiveness (IMCO) will create a budget and expenditure database with the following chart. This database will be a time series from 2000 on for each state and for the central government. The same data will be used to perform simulations about possible changes in taxes and in state and municipal revenue raising.

The database shows revenues for each state for the years 2000 to 2009 divided into 15 categories and 60 subcategories according to the following list:

<b>Category name</b>	<b>Description</b>
Total revenue	Total revenue expected in the budget
Total own-revenue	Revenue generated by the state such as taxes, products, rights and exploitation rights
Taxes	Total taxes collected
Payroll	State tax on wages
Lodgement	State tax on lodging
Lotteries	State tax on lotteries, raffles, gambling, sweepstakes and contests
Used motor vehicles acquisition	State tax on used vehicles acquisition
Vehicle ownership	State tax on vehicle ownership
Entertainment and shows	State tax on public shows and entertainments
Professions	State tax on fees for professional services
Transmission of property	State tax on transmission of property
Exercise of medical activities	State tax on fees for medical services
To promote education, roads, tourism and ecology	State tax to promote education, roads, tourism and ecology
To promote state education	State tax to promote state education
Other taxes	Various state taxes
Rights	Total charged for rights. The rights are revenue generated by government dependencies for public services or paperwork.
Products	Total charged for products. The products are the yields of state enterprises.

Exploitation rights	Total charged for exploitation rights.
Coordinated municipal taxes	
Accessories	
Extraordinary state revenue	
Special contributions	
Initial availability	
Others	Other revenue generated by the state that do not match with the categories above
Total federal revenue	Revenue received by the state as a result of federal transfers. Include revenue-sharing, central government transfers and other transfers from the federal government..
Total revenue sharing (branch 28)	Resoruces received by the state through the branch 28 of the Federal Budget. Include participations and revenues for federal taxes coordination.
General participation fund	
Municipal Promotion Fund	Revenue sharing totally for municipalities.
Vehicle ownership	Federal tax on vehicle ownership
Special Taxes (Alcohol and Tobacco)	Special tax on products and services
ISAN	Tax on new vehicles
Control fund	Revenue sharing for activities of local control
Compensation fund	Revenue sharing deliverd to states according to the Tax Coordination Law
Extraction of oil fund	
Compensation fund for the extraction of oil states	
ISAN compensation fund	Fund delivered to compensate losses generated by the modification of the Tax Coordination Law
Incentives accessories	
IEPS oil Compensation fund	
IEPS (oil)	Special Tax
Revenue sharing advances	
Other revenue sharing	
Coordination in rights	

Total Incentives	
ISR REPECOS	Income tax
ISR Reg. Intermediate	Income tax
ISR land (disposal of assets)	Income tax
IEPS Apuestas y Juegos REPECOS	Special tax over products and services applied to gambling
IVA REPECOS	Value added tax
IETU REPECOS	
Non tax federal administrative fines	
Federal fines	
Federal surcharges	
Control actions	
Incentives for control actions	
Incentives for inspection and surveillance	
Shoreline federal zone	Rights for the use of the shoreline federal zone (ZOFEMAT)
Final sale of oil tax	
Fishing permissions	
Fees for travel services	
Implementation costs	
Roads and bridges	
Tax credits	
Heavy load	
Other incentives	
Total Central Government transfers (Branch 33)	Resources received by states from Branch 33 of the Federal Budget. Includes the 8 funds of central government transfers established in the Tax Coordination Law
FAEB	Basic Education
FASS	Health Services
FAIS	Infrastructure
FAIS State	State infrastructure
FAIS Municipal	Municipal infrastructure

FORTAMUNDF	For the municipal strengthening
FAM	Multiple inputs
FAM Social	For social purposes
FAM Educación básica	For basic education purposes (infrastructure mainly)
FAM Educación superior	For high education purposes
FAE	To special education
FAE tecnológica	Technological education
FAE adultos	Adults education
FASP	Public Security
FAFEF	For states strengthening
Total Other Federal transfers	
Subsidies	
Reassigned spending	
Transfers	
Federal extraordinary revenue	
Surplus	
FIES	
FEIEF	
Conventions	
Pemex aportations	
Other federal aportations	
Other federal revenue	
Total Funding, securitization and monetization	
Revenue from securitization	
Revenue from funding	
Debts from previous fiscal years	
Financial products	

Data will be obtained from public sources of information such as the National Institute of Statistics (INEGI), the Federal Treasury (SHCP) and the different State Treasuries. It will be necessary to verify federal and state budgets as well as public accounting results.

INEGI allow us to know the revenue structure of each state and municipality for the different categories (taxes, rights, central government transfers and others) since 1989. At the same

time it allows us to know the expenditures such as subsidies, transfers, public infrastructure or others.

The Federal budget allow us to know each year what were the amounts transferred to each state, the particular types of allocated expenditure and the amount and the projects to which this spending is allocated, for example education or infrastructure.

It will be necessary to review federal and state laws on budget and fiscal responsibility to explore the possible reforms to tax collection and know which changes in laws are necessary, if any.

Also some demographic databases will be used. We will obtain this data from INEGI both censuses and surveys.

In order to have multiple choices of explanatory variables, we will also use IMCO's databases consisting of 120 indicators for the 32 states and for 373 municipalities.

## Simulations

In order to fully grasp the lack of fiscal autonomy at the local level, it is paramount to discover the amount of resources that state and municipal governments are reluctant to obtain from their taxpayers. Hence, it is necessary to distinguish between real and potential revenues. In this matter, IMCO will use the following methodology:

1. Discover the revenues that state and municipal governments would obtain locally in a scenario where all citizens legally obliged and economically capable of paying their due taxes actually do so. For this, IMCO will use demographic and socio-economic statistics (from INEGI and the National Population Commission) to dissect the population by employment status, age and income. This will allow us to identify who should be paying taxes and is not in reality. Such is the case of the labor force informally employed.

In order to get the potential revenue of each state we propose to use a stochastic frontier model such as the one developed by Battesse & Coelli (1991) and adapting the model proposed by Alfirmán (2003) and Aguilar (2009).

First we set the revenue raising function as

$$R_{i,t} = f(\alpha, x_{i,t})\exp(v_{i,t}) \quad (1)$$

where

$R_{i,t}$  = Revenue raising in state or municipality  $i$  during period  $t$ .

$\alpha$  = Is a coefficient vector

$x_{i,t}$  = Is a vector of explanatory variables that would depend on the source of income in question

$v_{i,t}$  = Error term

We define the stochastic residue as

$$v_{i,t} = u_{i,t} - e_{i,t} \quad (2)$$

Where

$u_{i,t} = N(0, \sigma^2)$  is associated to effects of non taxes policies on the raising level and  $e_{i,t} = N(\mu, \sigma^2)$  is related with specific features of tax administrations of each state.

This specification of the stochastic residue allows us to make a distinction between potential and real revenues. The difference is given by the stochastic term  $e_{i,t}$  that can be interpreted as the fiscal effort. In this way, we define the fiscal capacity or potential revenue as

$$R_{i,t}^* = f(\alpha, x_{i,t}) \exp(u_{i,t}) \quad (3)$$

Fiscal effort can be obtained by comparing real and potential revenue, this effort is described as:

$$E_{i,t} = \frac{R_{i,t}}{R_{i,t}^*} \quad (4)$$

We can easily verify by replacing (1) and (3) in (4) and (2) in (1) that

$$E_{i,t} = \exp(-e_{i,t}) \quad (5)$$

Considering this, we can figure out the temporary behavior of  $e_{i,t}$  as follows:

$$e_{i,t} = \delta_{i,t} e_i = e_i \times \exp(-\delta(t - T)) \quad (6)$$

This specification implies that efficiency on tax collection should change over the time and, given the condition over  $e_{i,t}$  and assuming a positive  $\delta$ , tax collection efficiency should increase over time.

The idea is to show that even if each state raise the potential amount of revenue, this would represent low incomes in proportion to GDP and would not be enough to cover the fiscal gap that will occur in the coming years due to the fall in oil production.

In this point is implicit the estimation of potential bases for existing taxes.

2. We will analyze the legislative proposals in fiscal issues that have been submitted to Congress in the last 5 years in order to measure their potential impact.

In order to conduct this analysis we will identify the tax base of each proposal and depending on the particular features of each one we will propose a methodology to measure the potential revenue and the possible side effects over consumption or welfare.

Also we will run a case study of the state of Coahuila, the only one which allows mayors to stay 4 years in office. The idea is to isolate the effects of other variables

and try to find a relation between a longer period of government and the increase of local revenue.

For this stage, we will work under the hypothesis that government periods lasts 3 years and this will not change in the short term.

## Deliverables

IMCO will deliver the following products upon conclusion of the project:

1. Essay which thoroughly describes the Mexico's challenge to the fall in oil production. The origin of the fiscal dependence problem, its evolution and its current trajectory.
2. Review of the federal, state and municipal legal frameworks concerning taxing and revenue raising faculties and prohibitions. This will show how even if states raise the potential revenue, this will not be enough to ensure healthy public finances.
3. Federal, state and municipal budget and accountability databases for income and expenditure.
4. A report of composition and evolution of states income and results from the simulations.
5. Executive summary and public policy proposals.

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