Analysis of municipal public revenue sources: the case of study in the State of Mexico 2020

José Antonio Villalobos López

Dr. (C) en Economía ESE-Instituto Politécnico Nacional (México)

jvillalobosl7500@egresado.ipn.mx

https://orcid.org/0000-0001-5198-6058

ARTICLE SECTION

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Abstract: The aim of this paper is to determine the main independent variables that can explain the public revenues of the State of Mexico for 2020, to develop this work the deductive method was used, with a hermeneutic paradigm, qualitative approach and cross-sectional econometric analysis. The multiple linear regression exercises revealed the following results for the 125 municipalities of the State of Mexico: 1) The independent variable cadastral value of real estate resulted determinant for the figures of total income, own income and taxes; 2) The control variable population influences total income, federal participations, federal aportments, being located with inverse sense in own income and taxes; 3) The independent variable Gross Domestic Product (GDP) has an influence on federal contributions and duties (taxes); 4) The control variables population over 15 years of age without basic education, housing without sewage, housing without electricity and percentage of population using a computer have a greater influence in determining the Social Gap Index of the municipalities of the State of Mexico. There is no fiscal laziness, since the resources obtained from federal participations don´t discourage the collection of local contributions (own income and taxes).

Key words: municipal government; local finance; local taxation; local government.

IDEAS CLAVE / HIGHLIGHTS / IDEES CLAU

1. El Estado de México cuenta con 17 millones de personas (13,5 % de México) y aporta el 10,1 % del PIB nacional.

2. El 76,5 % de los ingresos públicos municipales en el Estado provienen de recursos federales (participaciones y aportaciones).

3. Las participaciones federales se encuentran relacionadas con las variables población y PIB, mientras las aportaciones federales con la población.

4. Los ingresos propios municipales están vinculados con el valor catastral.

1. The State of Mexico has 17 million people (13,5 % of Mexico) and contributes 10,1 % of the national GDP.

2. 76,5 % of municipal public revenues in the State come from federal resources (participations and aportments).

3. Federal participations are related to the population and GDP variables, while federal aportments are related to population.

4. Own municipal revenues are linked to cadastral value.

1. L'Estat de Mèxic compta amb 17 milions de persones (13,5 % de Mèxic) i aporta el 10,1 % del PIB nacional.

2. El 76,5 % dels ingressos públics municipals a l'Estat provenen de recursos federals (participacions i aportacions).

3. Les participacions federals es troben relacionades amb les variables població i PIB, mentre les aportacions federals amb la població.

4. Els ingressos propis municipals estan vinculats amb el valor cadastral.

EXTENDED ABSTRACT[1]

The objective of the article is to answer the question "What are the variables that determine the different sources of income for the municipalities of the State of Mexico?", for which the main independent variables that influence the obtaining of the figures of municipal public income of the 125 municipalities of the State of Mexico are analyzed.

The work is framed under the deductive method, since knowledge is obtained through reasoning and abstraction of universal concepts, following a hermeneutic paradigm, with a qualitative approach, making descriptions of events of defined behavior, where statistical information is also presented to analyze the segment of reality that is observed in the obtaining of municipal public income.

This study sought to explain which independent variables are the most influential in determining municipal public revenues throughout the country, but there is a lack of complete information for each and every one of the 2,457 municipalities that make up the country in 2020 (including the mayors' offices of Mexico City). For example, there is no way to obtain data on the cadastral value of all municipalities in the country (Unda, 2021).

Thus, it was decided to work in one of the entities that has the most information for all its municipalities: State of Mexico. This state has had basic economic statistics for the 125 municipalities of the state since before 1984.

In order to respond to the objective of the study, the theoretical and conceptual framework is based on the description of municipal management indicators, as well as on pointing out the main aspects or variables that influence the determination of the different sources of municipal financing.

The analysis of this work is based on the use of fundamental econometric tools, including four main ones: 1) Coefficient of determination; 2) F distribution; 3) Student's t-statistic; and 4) Durwin-Watson coefficient. Not seeking to predict the amount of municipal public revenues. We make use of cross-sectional series of data from the 125 municipalities of the State of Mexico, ranging from 2018 to 2020 (based on the most current data), making use of a static order archetype.

The conclusions reached in this work are as follows: Local governments should increase their own resources so that they can influence the promotion of territorial development and thus decrease the marked dependence they present on federal resources (participations and contributions).

For the different figures of municipal public revenue of the State of Mexico in 2019, the main explanatory variables are: cadastral value of real estate, number of population and municipal GDP. For total municipal revenues, the most important variables are population, cadastral value and to a lesser extent municipal GDP. Federal participations are explained by the number of population and municipal GDP; while federal aportments are only determined by the number of population and with a statistically significant high value.

Own municipal revenues are explained by the cadastral value and, contrary to expectations, population has an inverse influence, while GDP has a modest influence. In the case of municipal taxes, cadastral value and population have a high degree of significance for their explanation, the first variable in the positive sense and the second

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in the inverse sense; GDP also has a minor influence in the inverse sense. Municipal rights are determined solely by GDP with a high degree of significance.

The fiscal laziness index was applied for two income figures (own revenues and taxes), inferring that there is no such laziness in the municipalities of the State of Mexico for 2020, which is interpreted that with increases in federal participations, own revenues and municipal taxes do not fall.

To explain the social backwardness index (poverty indicator) in the municipalities of the State of Mexico in 2020, the variables housing without drainage, population aged fifteen or older with incomplete basic education and housing without electricity are placed as highly significant, and the percentage of the population that owns computers has an inverse influence on the social lag index.

Due to space problems, the complete econometric model of municipal public revenues in the State of Mexico is not addressed, as well as the link or interpenetration that such models would present with the conformation of a municipal typology, which could be useful for decision-making on the economic policy to be implemented in homogeneous localities or those with similar characteristics.