

Improving rural property tax instruments: A case study of Sinaloa, Mexico

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Abstract: The objective of this work on the Rural Property Tax is to make a proposal to improve the instruments for statistical information on both income and investment spending. A qualitative methodology is proposed to make transparent from which community the tax is generated and how to decide the expenditure in public works for rural communities. Finally, public policy recommendations are made such as the suggestion that investment spending should not be concentrated in a small group of communities but should be distributed strategically for the well-being of the rural population. In this regard, it is important that the municipal government reaches agreements with ejido commissaries, syndics and commissaries so that there is a positive economic, social, cultural and political impact. Likewise, the creation of fiscal observatories to follow up on the route of income generated by the tax and the investment spending executed with the said resources. Truth is that the great importance of this tax for Sinaloa's municipal public finances has not yet been fully appreciated. Among the findings was the preferential treatment given to taxpayers engaged in aquaculture and vegetable exports by paying a lower rate than that established in the law; while agricultural and livestock activities pay a higher rate; there is also a lack of transparency in the selection process of the communities that will benefit from investments for public works. Recommendations for future research may be to address how the public works bidding process is conducted; what experiences exist of tax observatories that monitor both the collection and the correct exercise of public expenditure of this tax; also explore why there is no public policy focused on benefiting the most marginalized communities in Sinaloa's municipalities with public works.

Keywords: property tax; producers; tax base; income; expense

1. Introduction

The present work is developed in the field of local public finance and includes an investigation about the Rural Property Tax (RPT), the problem is that there is no clear information both for municipal governments and for taxpayers; which are the determining factors to decide what types of public works are approved? And, what is the list of the benefited communities? Agricultural lands located in the state of Sinaloa occupy 21% of the rural territory, which is equivalent to 1 million 201 thousand 777 hectares (INEGI, 2023). This federal entity is the one that provides the vast majority of food from the Mexican field. Added to the above, agricultural producers in Sinaloa are considered large taxpayers of the Rural Property Tax (RPT) who, the vast majority, comply with the payment of this tax to the local treasury.

In this federal entity, RPT taxpayers are not required to be sent tax collection reminders (Moulton et al., 2022) because the said tax is deducted when they sell their production and then the resources are delivered to the municipal public treasury; they are taxpayers with lower late payments and the resources that they contribute are used

in the construction of public works in rural areas. For this reason, the aim is to make the tax on rural production paid by rural producers in this federal entity of Mexico more transparent. The objective of the work was to design instruments that allow transparency in the origin of the tax and its application in public works that benefit their rural communities.

2. Literature review

In the theoretical and historical review of this tribute, it is recognized as the oldest in the world. It was born in England. In this regard, Smith (2014, pp. 745–746) makes reference to this, where its manifestation was “the household currency, that is, a tax of two shillings on each household, of things intended for habitation.” Classic authors such as Oates and Schwab (2014, pp. 12–13) say that, “In 1662, Charles II imposed a tribute of 2 shillings on each home and stove. In 1696, King William III introduced a tax on housing that levied the number of windows.”

Reflecting on the quotes from Smith (2014), Oates and Schwab (2014), it follows that the purpose was to design a property tax. For his part, Stiglitz (2000, p. 493) mentions that, “Transparency is an important characteristic of a good tax, knowing who benefits and who pays it.” In reference to the collateral damage that the application of taxes can generate, Keen and Slemrod (2021, p. 14) point out that, “It is rarely taken into account in public debate.”

Literature shows that in other latitudes of the world such as in the state of Colorado, United States, using electoral district voting, Propheter (2023, p. 1), “Finds that democratic-leaning voters were more likely than republicans, to repeal the transfer of property taxes from residential to non-residential properties.”

In reference to property tax revenues, Moulton et al. (2022) finds that, “Sending a reminder letter makes them less likely to have tax delinquencies, which reduces their risk of mortgage foreclosure.” In the performance of this tax, Berset and Schelker (2023, p. 1), “Fear that fiscal decentralization and competitive pressure on local governments will affect welfare policies and lead to inefficient levels of redistribution”. That is, in any local government there may be problems of inefficiency in the allocation of spending financed with the income generated by this tax. However, “Public spending is an effective instrument for developing and developed nations” (Van, 2023).

In fact, “The effects of fiscal policy on economic activities have been the focus of academic research and public debate” (Kim and Nguyen, 2020). In this regard, Zhang and Nguyen-Hoang (2022), “Found that the income stability of autonomous cities comes from the increase in property tax.” Of course, “Voter participation has a positive impact on cost efficiency” (Geys et al., 2010).

In rural areas, “There is a climatic vulnerability for the producing regions” (Kan et al., 2023), as is happening today in Sinaloa, Mexico, since in this last trimester of the year 2023, there is no availability of water for irrigation of crops, so it is also expected that there will be a drop in the productivity of the aforementioned property tax.

The agricultural policy implemented in Europe, “Has, since 1960, supported farmers to improve productivity, guarantee fair prices, support economically

sustainable food supplies and a fair standard of living for the inhabitants of agricultural communities” (Baldoni and Ciaian, 2023, p. 1). This agricultural policy instrument needs to be applied today in Sinaloa so that they obtain more income and, of course, they will also be able to contribute more income from the RPT for the execution of public works.

In agreement with Stiglitz (2000) the statistics and accountability of this tax must be improved, otherwise, as argued by Keen and Slemrod (2021, p. 14), collateral damage may arise and the stability of collection referred to by Zhang and Nguyen-Hoang (2022) may be challenged. Hence the importance of attacking this problem and, by means of better instruments, clarifying the route of income and expenditure of this local tax.

Rural property tax in Sinaloa

According to article 115 of the Political Constitution of the United Mexican States (CPEUM, 2023, p. 118) it is established that:

“Municipalities shall freely administer their treasury, which shall be formed from the income of the property belonging to them, as well as from the contributions and other income established in their favor by the legislatures, and in any case, they will collect the taxes, including additional fees, established by the States on real estate property, its fractionation, division, consolidation, transfer and improvement, as well as those based on the change in value of the real estate.”

While article 80 of the Political Constitution of the State of Sinaloa (CPES, 2023, p. 58) mandates that:

“The public treasury of the state shall consist of the real and personal property included in its patrimony; by the taxes, duties, products and benefits established in its favor by the laws of the state”.

Reviewing the fiscal history in Mexico during the “Porfiriato, it was the state government that ended up collecting the property tax” (Unda, 2015, p. 53). In Sinaloa, since 1983, the municipalities have been responsible for the collection of RPT, which was established in article 115 of the CPEUM. Since then, this tax is levied on the value of the production generated in the land of the rural sector of this state, located in the northwest of the Mexican Republic.

3. Methodology

For the purposes of this work, qualitative methodology is used. Instruments such as unstructured interviews and documentary review were used. For this it was consulted theoretical references of this local tax, tax laws on the subject, background of the RPT, the role of agricultural producers, tax rates applied to agricultural products, public investment, tax administration and behavior of RPT and UPT (urban property tax) taxpayers. All of the above was useful to make a proposal to improve the RPT’s statistical information instruments. To compile the information, the participation of key informants (appendix) such as agricultural producers, public officials, local legislators, and experts in local fiscal policy was of great importance. Of course, it was agreed not to put their names in this work. Unstructured interviews, which were conducted face-to-face with individuals, provided valuable qualitative data for this

research. The information was collected using the data saturation technique. The latter were analyzed based on both the theoretical framework and the documents consulted on the evolution of the RPT in Sinaloa, which made it possible to design this improvement proposal to make the tax more transparent.

Theoretical references included articles by classic and contemporary authors on public finance; the legal framework of the RPT. The data provided by the key informants were obtained through the interview forms attached at the end of this paper. In the case of the 6 public officials, 3 legislators and 20 taxpayers, they were guaranteed to keep their names anonymous. The interviews of the first two actors were conducted in the offices where they work, while the taxpayers were interviewed in their farmhouse or on their farm, while they were working their land.

4. Empirical evidence

In 1987, through a diagnosis carried out on property taxation in rural areas by personnel from the so-called Secretariat of Public Finance and Treasury (now Secretary of Administration and Finance), it was found that the main problem was that the lands in the rural sector, even though they were subject to the property tax, their contribution of income to the local public treasury was very low. In that year, Sinaloa fiscal policy experts considered that there was great potential for property taxes in rural areas, so it would be important to tax the production of grains, vegetables, livestock, aquaculture, among other productive activities developed in the countryside. The issue was that the tax already existed, but it was difficult to collect, so it was necessary to design an instrument through which taxpayers paid easily and quickly to the state treasury.

4.1. Tax reform to increase revenue

This problem of low tax collection, after carrying out possible scenarios to attack it, the main instrument was to reform the Municipal Finance Law (LHM, 2023) especially article 35, through which the obligation to pay the RPT was established. That's how it was called, hence its adjective rustic, that is, linked to the countryside. Once the strategy was agreed upon, the next step was to make the said information public, so, at a working meeting of the permanent commission of tax officials, held in Mazatlán, Sinaloa in January 1988, the then governor of the state of Sinaloa commented to all the participants:

“I would like to mention by way of example that the Legislative Branch in the state of Sinaloa has proposed a fiscal reform of great scope and magnitude. A reform that allows to increase the income of the municipalities, which are currently in a difficult and sometimes critical financial situation. So difficult that in some cases they may not be able to pay salaries and wages, electric power, fuel costs for patrol cars. A fiscal reform that gives 100 percent of the increase in income to the municipalities. It is based on three aspects.

The first, a progressive rate for urban properties that are not built on. For vacant urban properties, it raises the tax rate according to the size of the property, recognizing that in the case of housing developments, special treatment must be given. Secondly, for the same urban property tax, it modifies the previously

existing rate of 10 per thousand to four rates: 5, 10, 15 and 20 per thousand, charging less to those who have less and more to those who have more capacity to pay.

Third, it modifies the Rural Property Tax, charging it based on the value of agricultural production in those areas. This will allow, in global terms, doubling in real terms, in constant pesos, the income that the municipalities will receive in 1988 in relation to that received in 1987. It also has a very special feature. As we are in Sinaloa, as in other states of the Republic, in great need of public services and public works, agreements will be established with the Municipal Presidents, so that one hundred percent of the resources obtained from the rural tax will be used to carry out works and investments, mainly of a social nature.

Nothing will be destined to pay bureaucracy. Nothing will be destined for the government to serve itself, but rather to expand the capacity to attend to society, to all the people of Sinaloa. This is being done in a year of political characteristics, we are aware, as were the legislators, of the difficulties that this implies; but it seems to us that immobility and inability to attend to the majority social groups would be more serious” (INDETEC, 1988, pp. 60–61).

The speech of the then state governor labeled the income generated for investment spending for the benefit of rural communities. It was mentioned that the resources would be used to finance public works and investments of a social nature, but that nothing would be applied to current spending that does not generate welfare for the inhabitants of the rural sector of Sinaloa. However, in the early years, most of the municipalities used it for current spending and nothing happened. In the Sinaloa State Congress, the public accounts approved this expenditure without major difficulty.

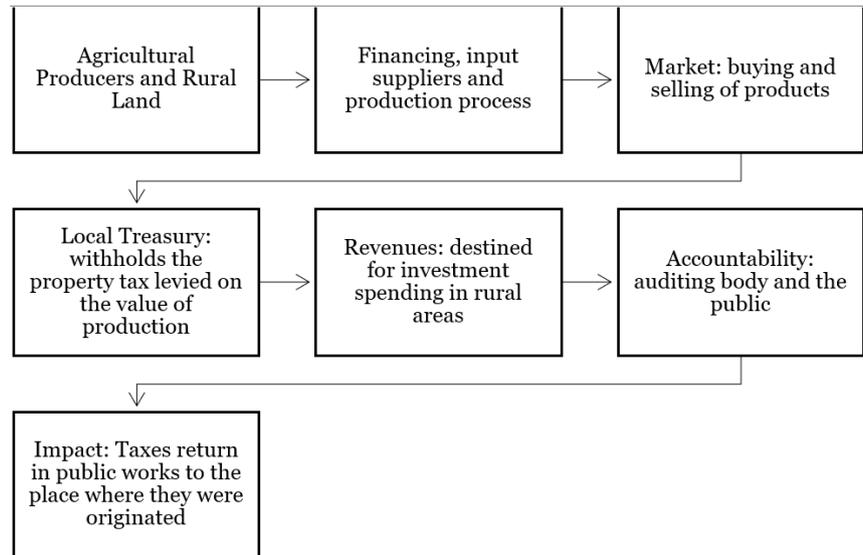
However, for the past two decades, the demand for accountability on the part of agricultural producers and the local legislature has effectively made RPT spending function as a transfer. It has become an excellent example of local public policy for Mexico’s 2471 municipalities (INEGI, 2022).

4.2. RPT and UPT taxpayer behavior

In this state, the taxable base of the UPT (urban property tax) is the value of the land plus the buildings attached to it, while the RPT, as of 1987, is based on the value of the marketed production. Almost 50 percent of the UPT taxpayers in Sinaloa’s municipalities are those who comply with their payments and the rest are debtors. For example, as of 30 June 2022, in the municipality of Culiacán, Sinaloa, “Of 372 thousand cadastral codes that make up the real estate registry, only 40 percent have paid” (El Debate, 2022). This means that only 40 percent of compliant taxpayers are financing the public services of the remaining 60 percent of tax evaders, but the latter are the most demanding of the municipal government to meet their demands.

The case of RPT taxpayers is a very different and favorable story for the municipal treasury. It is difficult for producers in the Sinaloa countryside to evade payment because when they sell their production, the buyer withholds this tax when paying them for their harvest. However, in June of this year, article 37-Bis of the local treasury law was amended, which mentions that municipalities may “enter into agreements with the withholders of this tax, in order to facilitate its collection”

(LHMES, 2023). Taxpayers may now pay directly to the municipal treasury or request that the purchaser of agricultural products continue to withhold the tax and declare it to the local treasury. Taxpayers include the farmer who grows corn, the Aquaculturist who produces shrimp, the cattle farmer who raises cows and the poultry farmer who offers poultry. However, there are more actors that participate in the route of this tax, as shown in the following **Scheme 1**.



Scheme 1. The role of rural agricultural producers vis-à-vis the municipal treasury (source: own elaboration based on field work).

As can be deduced, UPT taxpayers are more in arrears than producers who pay RPT. In the case of the former, they are responsible for paying directly to the municipal treasury, while in the case of the latter, they have been automatically deducted the collection at the time of the buy and sale of their products in the collection centers or warehouses where they deliver the production. Of course, as of June 2023, when reforms were made to the LHM (Municipal Finance Law) to facilitate the flow of revenues to the municipalities, taxpayers will be able to enter into payment agreements directly with the municipal treasuries. In the future it will be possible to evaluate how municipal governments manage the collection of RPT.

4.3. Tax rate and public investment

Sinaloa’s municipalities have different financial capacities to offer public services to their citizens. This justifies that they should receive fiscal transfers from the highest level of government. According to Shah (2007), “Transfers are offered as a back-up to the budget”. Thus, transfers operate under fiscal laws between the different levels of government anywhere in the world. In the case of Mexico, they are distributed in accordance with the Fiscal Coordination Law (2018).

The urban property tax collected in Sinaloa’s municipal treasury is generally used by municipal tax officials to finance current spending. This is allowed by law. On the other hand, the resources from the RPT must be applied to capital expenditures, and are conditioned exclusively for public works in rural areas. Therefore, the RPT functions as a contribution allocated to investment spending for works in favor of

Sinaloa’s rural communities; it cannot be used for current spending. It is therefore an excellent example of public policy for other municipalities in the country.

Article 35 of the LHM (Municipal Finance Law) (2022) in its subsection II establishes the rates to be charged for the tax (**Table 1**) and the conditions under which the expenditure must be made.

For rural properties destined to:

Table 1. Rates of tax.

a) Agriculture	1.0%	Of the total value of its annual marketed production, based on the average rural price.
b) Aquaculture	1.0%	Of the value of its annual marketed production.
c) Livestock	1.0%	Of the value of its annual marketed production.
d) Pig farming	0.5%	Of the value of its annual marketed production.
e) Aviculture	0.5%	Of the value of its annual marketed production.

Source: Municipal Finance Law, 2022.

“For the application of the rate referred to in this precept where the taxable base is constituted by the value of the annual production marketed, it may be determined jointly by the tax authority in charge of the administration of the tax and the state agencies representing the agricultural, aquaculture, poultry and livestock sectors.”

Regarding the destination of the expenditure, which is destined to investment spending, the last paragraph of section II of article 35 of the aforementioned law mentions that:

“The proceeds of the concepts referred to in this section shall be used solely and exclusively for public investments in the rural areas of the corresponding municipality, for which purpose a special accounting account shall be kept to verify the scrupulous management of these funds, with the corresponding participation of the Municipal Planning Committees. Public investment shall be understood as that destined for public works and the acquisition of goods for the provision of public services to the community; it may not be used for items such as fuel, lubricants, salaries of administrative or operative personnel of the City Council, bonuses, gratuities or compensations.”

4.4. Administration of the tax

This local tax (RPT) belongs to the municipalities; however, through the signing of a collaboration agreement, it is administered by the state government, which, for administering it, charges them 7 percent of the income obtained. To prevent tax evasion, the Sinaloa State Tax Administration System (SATES) has tax booths. In the south are the La Concha Tax booth (Municipality of Escuinapa) and the Concordia tax boot (Municipality of Concordia). In the north is el Carrizo tax boot (Municipality of Ahome).

However, as of May 2023, due to reforms to the LHM (Municipal Finance Law), municipalities may sign agreements directly with taxpayers. The RPT does not consider exemptions for taxpayers. On the contrary, since 1993, agricultural producers in Sinaloa were charged a fee called “liga”. This was equivalent to 12.5 percent of

what they paid for the rustic property tax. This was illegal, since the aforementioned fee is not established in any Municipal Revenue Law or in the Municipal Finance Law of the State of Sinaloa. It was clearly a robbery to the farmers. However, as of 1 June 2022, it was eliminated by instructions of the Governor of the State. SATES (Tax Administration Service of the State of Sinaloa) ceased to be a collection box for this forced resource that was taken from taxpayers.

On the other hand, the UPT, which is levied on the value of urban properties, is subject to tax benefits. In other words, there is a differentiated treatment between both types of taxpayers, where UPT taxpayers are more benefited. It may be asked why? Municipal governments collect less revenue in this area, garbage collection and other public services are financed with federal participations that come to the municipalities from the federal government under the national fiscal coordination system. Because there is insufficient income generated by the UPT; therefore, there is a social cost of the UPT delinquency, as this is reflected in the budgetary difficulties faced by the municipality to finance the aforementioned public services.

Historically, the Sinaloa State Congress has restricted increases in the UPT, which in the future may lead to a desirable deterioration of local public services provided by municipalities. In addition to the above, the resources of the Municipal Development Fund (FFM) article 2-A, section I of the Fiscal Coordination Law (2018) establishes that this transfer will be distributed according to the property tax and water rights collection figures accredited by Mexican municipalities distributed by the federal government to the municipalities take into account the evolution of the collection of property tax and potable water rights, thus doubly affecting municipal public finances.

On the other hand, if resources are not generated by the RPT, as occurred in Sinaloa at the beginning of February 2011, since temperatures of 5 degrees below zero registered losses in most of the area planted with corn and, of course, the drop in the price of corn in 2023, it also reduced investment spending and the communities will receive less public works because producers were not able to generate the level of income obtained in 2022. In this year 2023, the decrease in RPT income was a collateral effect of the differentiation of guarantee price policies, which was only granted to producers who planted up to fifteen hectares. Those who planted a larger area were only able to sell at market prices.

4.5. Application of the tax per product

Table 2 shows the origin of the RPT that is actually charged on each of the agricultural products. However, the tax rate (0.01) of 1 percent is only applied to agricultural products, which can be qualified as tax inequity.

Article 35 of the LHM (Municipal Finance Law) (2022) states that, “The tax authority in charge of the administration of the tax and the state agencies representing the agricultural, aquaculture, poultry and livestock sectors may jointly determine the taxable base of the annual marketed production.” But nowhere in the law does it mention that they may move the tax rate, which is happening.

Table 2. Origin of the rural production.

Origin of the rural production tax (rural tax) in Sinaloa			
Agricultural cycle 2021–2022			
Production	Tax rate	Price per tonne	Payable tax
Agriculture			
Bean	0.01	19,000.0	190.0
Corn	0.01	6800.0	68.0
Chickpea	0.01	20,000.0	200.0
Sorghum	0.01	5600.0	56.0
Wheat	0.01	5500.0	55.0
Aquaculture			
Shrimp	0.0035	100,000.0	350.0
Livestock			
Head of cattle	\$20 pesos per unit		20.0
Export			
Vegetables	\$12 pesos per tonne		12.0

Source: prepared by the authors based on field work and Municipal Finance Law from the State of Sinaloa.

Under this premise the question arises, can the performance of the rustic property tax be improved? I believe that it is possible to advance in the design of this public policy under the principle of benefit, that is, that taxes continue to return in public goods to the municipal geography where they were originated and have an impact on the welfare of the population.

5. Proposal to improve the statistical instruments

The proposal is justified because taxpayers, and the population in general, should be informed about how the income from this tax is generated; likewise, on the expenditure side, data such as the portfolio of public works to be executed and the list of rural communities where the investment expenditure will be applied should be disseminated. As Stiglitz (2000) says, it is a matter of being informed about: Where the tax is paid? And: What is this public resource invested in?

Normally, the state government, which administers this tax to the municipalities, sends the monthly settlements to the municipal treasuries, taking into account the variables shown in **Table 3**. In view of the above, the following methodological instruments are proposed to improve the performance of the RPT for the benefit of taxpayers, the population and the various governmental oversight bodies.

Table 3. Settlement of rustic property tax.

Settlement of rustic property tax revenues to the municipalities of Sinaloa				
Municipality	Agriculture	Livestock	Aquaculture	Export

Source: own elaboration.

5.1. The source of income

This first proposed instrument seeks to make transparent the origin: From which ejido the production that was the object of the RPT charge originated? This will help the committee that integrates the allocation of infrastructure investments in the different municipalities to have more elements for public spending decisions. In this proposal, shown in **Table 4**, SATES (Sinaloa State Tax Administration System) should provide this information to the municipalities. To this end, the RPT payment receipt should include a form requesting the location of the property, which can include the name of the ejido and municipality, as well as the collection center or place where the production was sold.

Table 4. Rural Property Tax in the Municipality Elota.

Origin of Rural Property Taxes in the municipality of Elota, Sinaloa				
Municipality	Agriculture	Livestock	Aquaculture	Export

Source: own elaboration.

SATES (Sinaloa State Tax Administration System), which administers this tax, must include a list of the amount paid by each of the ejidos, communities or, at least, syndicates that make up the rural territory when delivering the monthly liquidation to each municipality. This information will be very useful for the mayors who, in coordination with the syndics, commissaries and ejido commissaries, can discuss, with more grounds, the decisions on the investment spending policy of said tax so that it is not a unilateral decision but a consensual one. In this way, the principle of benefit could be complied with, that is to say, that the income paid for this tax be returned under the public works scheme to the place where the tax was generated.

Table 5. Rural Property Tax in the Municipality Culiacán.

Origin of Rural Property Taxes in the municipality of Culiacán, Sinaloa				
Syndicature	Agriculture	Livestock	Aquaculture	Export

Source: own elaboration.

In case it was complicated to obtain the origin of production by ejido, then the next option, according to **Table 5**, would be for SATES (Sinaloa State Tax Administration System) to organize it by syndicature. This could contribute to the implementation of a public rustic property tax policy that has a greater impact on the works to be carried out in each of Sinaloa’s eighteen municipalities.

5.2. The destination of expenditure

In reference to spending, the question arises as to: How are the works to be carried out and which are the communities that will benefit from RPT investments decided? In this area, it is the responsibility of the municipal governments to be accountable and to make transparent how they spend the income from rustic property taxes. But it is necessary to go further, that is, to prioritize the communities in which investments will be made, the type of works, the amount of resources to be applied, the start date, the delivery date, the number of beneficiaries and, of course, the impact on the rural population, as shown in **Table 6**.

Table 6. Public investment.

Public investment financed with tax on rural production (rustic tax) in Sinaloa						
Community	Work to be performed	Amount of investment	Starting date	date of delivery	Number of beneficiaries	Impact

Source: own elaboration.

Likewise, it is necessary to form a committee (**Table 7**) to make agreements and decisions on which communities will benefit. Here, each municipality that receives the income obtained from this tax should not only take into account the communities that contribute the most to the RPT, but also the localities that have a higher marginalization index. In other words, although this contribution operates on the principle of benefit, a redistribution of the works must also be sought in order to reduce the inequalities that exist between the rural populations of all the municipalities (it is important to clarify that it is not a matter of the less marginalized municipalities giving

up part of their property tax revenues in order to favor the more marginalized ones. Here the distributive equity proposal refers to the distribution that each municipality will make among the communities located within its rural geography) of Sinaloa and thus generate more equity.

Table 7. Committe to allocate public investment.

Committee to allocate public investment with the rural production tax (rustic tax)

Member

Source: own elaboration.

Likewise, it is important that the committee members include the participation of one of the representatives of the producers who pay the RPT. For example, in the case of urban property tax, the Municipal Cadastre Boards include as one of their members a representative of the real estate properties of the municipality. I believe that this should also include the taxpayers of the agricultural sector who pay the RPT.

In addition to the above, municipal governments must be transparent about the process by which works will be assigned to rural communities. These include the following guidelines:

- Receive requests for works from ejido commissaries, syndics and commissaries. These should not only be decisions made by the Municipal President, but should also take into account the needs expressed by the actors mentioned above. The budget is everyone's responsibility and cannot be left only in the hands of public employees.
- Decide in which communities the information survey will be carried out. For this it is important to send topography personnel from the public works department of the corresponding municipality.
- With the above information, the projects department of the public works department of the corresponding municipality will estimate the budget for each investment project to be executed.
- The bidding and awarding committee issues a call for bids based on the available income from rustic property.
- The assignment of the work may be direct or through public bidding.
- If it is done through public bidding, in accordance with the law on the matter, a call for bids must be published in the Official Gazette of the State of Sinaloa and interested construction companies must register in COMPRANET.
- Once the bidding has been made, it is passed to the Cabildo for discussion and approval.
- Once the Cabildo approves it, the contracts with the companies that will carry out the works must be signed.
- That citizen fiscal observatories be created in rural communities to ensure that

works are carried out with quality materials and that they do not fall into acts of corruption.

6. Discussion

In countries with economies in transition, where structures are being prepared for the birth of the property tax, there is debate as to What should be the tax base: the value of the land or the value of the land plus construction? This tax is difficult to evade, the property is highly visible; moreover, the latter cannot migrate. In the case of the state of Sinaloa (Mexico), rural producers are charged a tax levied on the monetary value of marketed production, which in the Municipal Finance Law (LHM, 2022), is called RPT. In the Municipal Revenue Law (LIM), which is approved each year by local legislators, it is also called RPT.

However, it is enough for any person or taxpayer to review basic tax theory literature to realize that the name RPT, as it was called in Sinaloa, is incorrect. In order for its nomenclature to be valid, its collection should be determined on the fiscal value of the land and in no way on the monetary value of the production generated on such rural land. For Smith (2014, p. 736), “Taxes on the product of land are, in reality, taxes on income”. Returning to what was stated by the father of economics, then the RPT does not fall on the value of the land but on the production generated on it, so it is a contribution that falls on income.

The above reflection suggests one of two things. The first, and easier, is to reform the LHM (Municipal Finance Law) and replace the name RPT with rural production tax. The second, which requires more work, would also be to make changes to the LHM (Municipal Finance Law) to replace the current taxable base that falls on the monetary value of production with the fiscal value of the land, which would generate a broad debate among the different actors involved in such local taxation.

Here the question would be, Does the RPT that taxes the value of the marketed rural production work better? Or, the one that taxes the fiscal value of the rural property? The answer to the above questions is not easy. Even new questions arise that need to be discussed, such as:

How well does taxing the monetary value of marketed rural production work today? Are there prospects for the growth of this tax through taxing the fiscal value of land, and it to be a significant source of public investment financing for rural communities in Sinaloa? Are agricultural producers and municipal governments prepared for the tax to be levied on the taxable value of the land? To date, the collection of the tax on the value of production has worked well, except in years when agricultural activity is affected by climatic phenomena; however, it is necessary to debate the feasibility of determining the tax value of the land in the future. Of course, any reform initiative that is intended to be promoted will also require taxpayers to be consulted. Truth is that the expenditure of this tax is not being used to combat poverty, given that in marginalized communities no works have been carried out with this source of income, but rather Mayors in turn decide them based on their political objectives or under pressure from political groups. This hinders economic development for Sinaloa’s municipalities.

7. Conclusion

RPT spending cannot be concentrated in a small group of communities according to the principle of equity and equality. How the distribution of investment spending is handled is important for the future of rural communities. The equity of investment spending should benefit all rural inhabitants where the tax is generated. In addition, by strategically distributing the work and in agreement between the municipal government and the ejido commissaries, syndics and commissaries, it can have a greater economic, social, cultural and political impact.

Taxes are deducted from producers when they sell their products in the market. In this regard, it is important that the state government ensures that the individuals and legal entities that withhold the RPT declare it to the state treasury within the times established by the relevant tax laws. This will allow the state government to pay, in due time and form, the RPT revenues that correspond to each of the eighteen municipalities, in terms of the administrative collaboration agreement that each municipality signs with the state in tax matters.

Add that it is necessary to create fiscal observatories, which should be integrated by rural producers and inhabitants of the communities in order to follow up on the route of income generated by the RPT and the investment expenditure executed with such resources. Particularly, to observe that the works are of quality for the welfare of the population. Voter participation in monitoring the use of public finances can help politicians to accept their assigned responsibilities. Public monies are so important that they cannot be left in the hands of those in power alone; greater citizen participation is required.

Finally, it can be concluded that, in the municipalities of Sinaloa, as in most of the country, there is a very poor performance of the urban property tax. It is not working well in favor of public services. What local fiscal policy changes should be made to improve it? Should taxpayers who pay continue to finance public services to those who do not pay, the latter becoming recipients of free benefits? Because it is the main function of the urban property tax to pay for local services that have a collective impact on the population.

The rustic property tax is a different story, it should be a source of pride for rural producers, for the population in general, for the Municipal and State governments which allows them to deliver public investments to rural communities every year. This is an excellent example of a local public policy that has not yet been considered as important for municipal public finances. The objective of designing these instruments will help to make transparent the application of the income generated by the tax in the investment of public works that benefit the population of rural communities.

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References

- Baldoni, E., & Ciaian, P. (2023). The capitalization of CAP subsidies into land prices in the EU. *Land Use Policy*, 134, 106900. <https://doi.org/10.1016/j.landusepol.2023.106900>
- Berset, S., & Schelker, M. (2022). Decentralization and Progressive Taxation. *Public Finance Review*, 51(2), 206–235. <https://doi.org/10.1177/10911421221121029>
- El Debate (2022). 60 percent of taxpayers owe urban property tax in Culiacán. Available online: <https://www.debate.com.mx/culiacan/El-60-por-ciento-de-contribuyentes-adeuda-predial-urbano-en-Culiacan-20220701-0048.html> (accessed on 3 October 2023).
- Fiscal Coordination Law. (2018) Chamber of Deputies of the Congress of the Union. Available online: https://www.diputados.gob.mx/LeyesBiblio/pdf/31_300118.pdf (accessed on 3 October 2023).
- Geys, B., Heinemann, F., & Kalb, A. (2010). Voter involvement, fiscal autonomy and public sector efficiency: Evidence from German municipalities. *European Journal of Political Economy*, 26(2), 265–278. <https://doi.org/10.1016/j.ejpoleco.2009.11.002>
- Institute for the Technical Development of Public Finances (INDETEC, 1988) *Municipal Public Finance Magazine*, No.52, December-January, pp. 60-61.
- Kan, S., Chen, B., & Chen, G. (2023). Globalization of forest land use: Increasing threats on climate-vulnerable regions. *Land Use Policy*, 132, 106798. <https://doi.org/10.1016/j.landusepol.2023.106798>
- Kim, T., & Nguyen, Q. H. (2019). The Effect of Public Spending on Private Investment*. *Review of Finance*. <https://doi.org/10.1093/rof/rfz003>
- Keen, M., Slemrod, J. (2021). *Rebellion, Rascals, and Revenue*. <https://doi.org/10.2307/j.ctv17nmzfd>
- Municipal Finance Law of the State of Sinaloa. (2023). Last amendment published in the P.O. No. 066, extraordinary edition. Available online: <https://www.congresosinaloa.gob.mx/leyes-estatales/> (accessed on 3 October 2023).
- Municipal Finance Law of the State of Sinaloa. (2022). Official Gazette of the Government of the State of Sinaloa P.O. No. 013, evening edition. Available online: <https://www.congresosinaloa.gob.mx/leyes-estatales/> (accessed on 3 October 2023).
- Moulton, S., Collins, J. M., Loibl, C., Haurin, D., & Brown, J. (2022). Property Tax Compliance and Reverse Mortgages: Using Nudges to Improve the Market. *National Tax Journal*, 75(1), 33–59. <https://doi.org/10.1086/717160>
- National Institute of Statistics, Geography and Informatics (INEGI). (2022). *Cuéntame-INEGI*. Available online: <https://www.cuentame.inegi.org.mx/territorio/division/default.aspx> (accessed on 3 October 2023).
- National Institute of Statistics, Geography and Informatics. (2023). *Agricultural Census 2022*. Available online: <https://www.inegi.org.mx/programas/cagf/2022> (accessed on 3 October 2023).
- Propheter, G. (2023). Partisanship and Property Tax Redistribution: Evidence from Repealing Colorado’s Gallagher Amendment. *Public Finance Review*, 51(5), 619–648. <https://doi.org/10.1177/10911421231171760>
- Shah A. (2007). *A Practitioner’s Guide to Intergovernmental Fiscal Transfers*. In: R. Boadway, A. Shah. *Intergovernmental fiscal transfers: principles and practice*. The World Bank, Washington D.C; 2007.
- Smith A. (2014). *Inquiry into the Nature and Cause of the Wealth of Nations*. Fondo de Cultura Económica. Nineteenth reprint. Mexico.
- Stiglitz J. (2000) *The Economics of the Public Sector*. Antonio Bosh Editor. Available online: <https://www.google.com/search?client=firefox-b-&q=Stiglitz+Joseph+%282000%29+La+Econom%C3%ADa+del+Sector+P%C3%ABlico.+Antonio+Bosh+Editor> (accessed on 3 October 2023).
- The Window Tax. *Land Lines*, April. Lincoln Institute of Land Policy. Available online: <https://www.lincolninst.edu/es/publications/articles/el-impuesto-sobre-la-ventana> (accessed on 3 October 2023).
- Van BN. (2023). The Relationship between Public Expenditure and Private Investment in Deloped and Developing Economies Policy Implications based on the Difference. Available online: https://hpe-rpe.org/wp-admin/admin-ajax.php?juwfpisadmin=false&action=wpfd&task=file.download&wpfd_category_id=227&wpfd_file_id=5170&token=49af

4306bd46b67ddf4c07e92cb16271&preview=1 (accessed on 3 October 2023).

Zhang, P., & Nguyen-Hoang, P. (2022). Home rule and municipal revenue stability: New evidence from Texas. *Public Budgeting & Finance*, 43(1), 38–60. Portico. <https://doi.org/10.1111/pbaf.12332>

Appendix

Semi-structured taxpayer interview form:

- (1) Are you an agricultural producer and also own agricultural land?
- (2) How do you finance the investment you make in your agricultural unit?
- (3) To whom do you sell your production?
- (4) Who collects the Rural Property Tax from you?

Semi-structured interview format for public officials:

- (1) What are the revenues collected from the Rural Property Tax used for?
- (2) Who is accountable for the use of these public monies?
- (3) Does the expenditure of the Rustic Property Tax have any impact on the population?

Semi-structured interview format for legislators:

- (1) What do you think of the proposal to improve statistical instruments to make the income and expenditure of the Rural Property Tax more transparent?
- (2) Do you consider that the origin and application of the Rural Property Tax should be clearer?
- (3) Should investments be made only in the rural communities that provide most of the Rural Property Tax collection?