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# WHEN SOCIAL INEQUALITY MEETS FISCAL ILLUSION: THE COGNITIVE REGRESSIVITY OF THE BRAZILIAN TAX MATRIX

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## Resumo

Under the premise that the tax matrix is the result of choices made by a given community to define the ways of financing the State, this research seeks to analyze the choices that shape this tax action and how these are characterized as techniques of tax illusion, distancing the Brazilian tax policy from a typical duty of a Democratic State of Law, which is to make the taxpayer aware of the fact as the real financer of the public machine. It will be argued that such scenario, coupled with the high social inequality existing in our country and the visible economic regressivity of our taxation, ends up influencing the poor perception of the most vulnerable strata of the population about the reality of the country and the lack of self-recognition of this portion of the population as subjects of rights, in what the paper will define as cognitive regressivity.

**Palavras chaves:** Fiscal Transparency - Tax Matrix - Social Inequality - Fiscal Illusion - Cognitive Regressivity

**JEL Codes:** D91 - H23 - H30

# SUMMARY

## 1. INTRODUCTION

In a democratic context, the tax matrix represents the choices made by a given political community as to how it will finance its system of rights available to society. Its main premise involves the recognition that the rights and guarantees provided by law, to exist, depend on a state apparatus endowed with the political and economic capacity to provide them, giving rise to the realization not only that the rights have costs, but mainly that these costs are socially shared through taxation. For this reason, the structuring of the tax matrix, besides being technical, is political. In this sense, it is closely connected with the various prescriptions contained in the constitutional text, as well as guided by the programmatic project defined therein.

In the case of Brazil, this project is delimited in several provisions that direct the economic policy to be adopted by the State for the fulfillment of certain objectives. This involves both a positive dimension of recognition of the unequal reality that marks us, as well as a normative dimension that refers to a society to be achieved, one that is freer, fairer and with more solidarity. Such a perspective ends up demanding from the public sector an active posture, in which the tax matrix, and the functions inherent to it, become indispensable instruments of intervention directed to such ends. Thus, the constitutional tax system does not have an autonomous existence in relation to the principles of the economic order, being also guided by them.

It so happens that the Brazilian tax system has historically adopted a regressive bias that not only does not comply with the objectives established in our constitutional text, but also seems to go against the interests of a highly unequal society such as ours, in which the less favored portion of the population contributes proportionally more to the maintenance of the State.

Tax regressivity, however, has little reverberation in our population, calling attention to the lack of transparency in the way financial activity is developed and the lack of clarity about how the costs of the State are distributed among the different social strata. The great mass of taxpayers, mostly subject to indirect taxation, is composed of individuals who pay into the public coffers "without feeling it", while society is induced to believe that tax revenues would be collected from Brazil's middle and upper classes, bearing in mind that, subject to direct taxation, these are the portions that "visibly" contribute. This distancing from reality is reinforced by the false perception that the collection of indirect taxes corresponds to the costs of businessmen and traders, and not to the social strata that consume, in the end, the good or service provided, and taxed.

The regressivity of taxation, therefore, is something that is beyond the comprehension of the great majority of Brazilians. Therefore, it is hardly reached by a qualified discussion around the State format we want, which rights we intend to have made effective, and, mainly, which parts of the population will be responsible for this financing.

The picture suggests, therefore, that our society is possibly subject to the effects of what the literature classifies as strategies typical of a fiscal illusion. By fiscal illusion we mean the set of mechanisms used by the governing parties to influence the misperception of individuals about the costs of the State, altering the respective perceived utility with the aim of reducing resistance and facilitating tax collection.

This picture of misunderstanding about financial activity, as well as the scope of its manifestations - among which indirect taxation is not the only one - will be the object of study of this research, which will analyze the impact of the so-called tax illusion on citizens' understanding of the tax phenomenon.

Against the backdrop of extensive social inequality, the paper will focus on strategies classified as tax illusions, characterizing them in the Brazilian tax matrix and evaluating their respective effects on the reduced cognitive capacity of individuals subjected to a situation of scarcity. It will be verified whether the misperception about tax incidence tends to be more severe precisely in those portions of the population that are more vulnerable, impacting on the self-perception of these individuals as members of our political community.

To build such a sense, we will start the work with an analysis of the social situation in Brazil, presenting the inequality that exists in our country and how the Brazilian tax system deals with this scenario.

Next, we will introduce the studies around the Fiscal Illusion Theory, referring to the origin of this theoretical current with the Italian financier Amilcare Puviani at the beginning of the 20th century, as well as its subsequent development.

Based on this theoretical contribution, we will turn to the study of the Brazilian tax matrix, to demonstrate the existence of a severe illusionary picture regarding the perception of the financing of our state apparatus.

Finally, we will address the central theme of this article, pointing out how the structure of our tax matrix, coupled with the recurrent use of illusory figures, tends to create regressive taxation not only from an economic perspective, but also from a cognitive perspective.

Thus, based on the aforementioned premise that the tax matrix in a democratic state is the result of political choices made, this paper will develop the concept of cognitive regressivity as a reflection of an illusory tax system that hides from the poorest segments of society their participation in the tax burden.

The expression cognitive regressivity, thus, seeks to represent the notion that the regressivity of our tax matrix enables the collection of most of the public revenue in an anesthetizing manner, without the people called to contribute understanding their role as financers of the Fiscal State. And by acting this way, it ends up denying citizenship to those individuals who historically are already on the margins of society. Access to information is hindered by an increase in the cognitive cost of understanding how tax incidence occurs - important information for effective political positioning in a context that purports to be democratic - precisely for the stratum of the population that, by living in a regime of deprivation of resources, already presents its cognitive capacity too busy with the problems arising from poverty.

This research follows a still unexplored path in the study of transparency and informational access to data regarding the State's financial activity, offering an original contribution by analyzing the role of fiscal illusion based on the deficit of recognition of the "common" citizen - especially the poorer classes of our society - as the State's financiers.

The research presented here can also generate relevant practical and theoretical effects. Practical effects because, in a context of tax reform as the one experienced today, the debate around greater fiscal transparency as a democratic instrument of social control and implementation of the popular will gains even more relevance. Introducing society into the public sphere of deliberation to define how the distribution of the social burdens and results resulting from the State's financial activity will take place means rescuing the foundations of constitutionalism and a republican ideal, conferring greater legitimacy to the political process currently under development.

Theoretical effects, in turn, since the research and proposal of this essay may contribute to the discussion and evolution of the debate surrounding the topic of transparency and access to information. It is our understanding that the reintroduction of the study on fiscal illusion and the repercussion of its effects on the different social strata will be of great contribution to the advances in the crystallization of the principle of fiscal transparency and, especially, in the re-signification of the fiscal debate and the public policies necessary to better achieve this objective, which should take into consideration the asymmetric distribution of cognitive costs for the perception of the Brazilian tax matrix.

## 2. CONTEXTUALIZING THE PROBLEM: SOCIETY, TAXATION AND REGRESSIVITY IN BRAZIL.

Recently, the economic regressivity of our tax matrix has prompted several academic studies aimed at denouncing the injustices of Brazilian taxation (Gassen, 2012; Afonso et al., 2017; Fagnani, 2018; Ribeiro, 2019). Still, and although provided for in Article 3 of the Federal Constitution, as well as an integral part of the chapter responsible for the Economic Order, the search for fairness in taxation has lost space in the political arena to the concern with the efficiency of the tax system, remaining ignored how the economic regressivity of taxation operates in our unequal society (Lukic, 2012).

Thus, to move forward in the discussion, it is necessary, first, to clarify and contextualize the social scenario on which such a debate around taxation should take place.

Although we have achieved significant advances in recent decades with the stabilization of the economy and the promotion of greater redistributive policies, it is observed that the results in terms of fighting inequality fall short of solving the problem of the deep heterogeneity of our society (Godoi, 2017a, 16-20).

Despite the series of social policies implemented to reduce the gap, several studies have indicated that the Brazilian Gini index remains stable and at a high level, especially when these surveys consider tax data, considered to be more accurate to measure the income of the wealthiest strata of society (Medeiros, Souza & Castro, 2015a; Medeiros, Souza & Castro, 2015b; Morgan, 2017). Such research points to the extent to which the top of the Brazilian social pyramid has captured the little economic growth observed in the period, enjoying a standard of living completely different from that of most of the country.

Even the most recent economic crisis has reflected this social inequality, affecting different strata of the population differently, with poorer families bearing the effects of the economic reversal more severely, including the loss of distributive gains made in previous decades. Meanwhile, the wealthier segments of society, although they have suffered the effects of the economic crisis episodically in 2015, have already taken advantage of the economic recovery in 2018, concentrating most of the gains in the period (Neri, 2019; Barbosa, Souza, & Soares, 2020).

Even the official data, which, as said, generally underestimate the income of the elites, have pointed to a massive growth in income concentration in recent years.

According to the Synthesis of Social Indicators, presented in 2020, income inequality has been growing in recent samplings, having in 2018, for example, the worst index since the beginning of measurement (IBGE, 2020a). According to the study, since 2015 there has been an increase in the income of the richest layers of society accompanied by a reduction in the poorest portions.

Such results would still reflect the increase in poverty observed in the period. According to the same survey, in 2019, 6.5% of the Brazilian population lived on less than \$1.90 a day per capita, i.e., below the absolute poverty line - or extreme poverty - according to the World Bank. Considering Brazil as an upper-middle income country, with the poverty line at US\$ 5.50 a day per capita, we would observe an increase in the number of poor people to 24.7% of the population. This represents, for that year, something close to 50 million people living on up to R\$ 436.00 a month.

A similar conclusion is reached by the 2017-2018 Family Budget Survey (IBGE, 2020b), whose data indicate that only 2.7% of Brazilian families have incomes higher than R\$ 23,850.00 per month, or 25 minimum wages, concentrating about 19.9% of all family income in the period. On the other hand, 23.9% of families - the poorest part - would receive up to two minimum wages, or something around R\$ 1,908.00, representing 5.5% of the national income.

Finally, according to the Annual Report on Human Development released by the UNDP (UN, 2019) in 2020, in relation to Brazil, we have that although we are stagnant as a country with income considered high, with a Human Development Index of 0.761, when we correct the value from the indicators of income concentration in our society, we began to boast an index of 0.574, falling close to 25% in the measurement. In terms of income concentration in the top 1% of the population, among the countries with available data, the report points out that we are the second country in the world in this respect, only behind Qatar.

Combating this situation, therefore, is something urgent for our society. This is because, in addition to the important existing constitutional mandate, there are other reasons just as relevant to justify the adoption of a redistributive bias in fiscal policy. In addition to being directly linked to the worsening of several other social indicators, such as housing conditions and access to education, health problems, sanitation, among others (Wilkison & Pickett, 2015), it is possible to state that both the rule of law and the existing conception of democracy are placed at risk in the face of such a large concentration of economic and political power (Piketty, 2014; Stiglitz, 2016).

And taxation is a core element of this debate, keeping an inherent connection with the project of society contemplated in our Constitution. This is because, discussing the structuring of the tax matrix is to address the choices adopted by that organized political community as to how the Social and Democratic State of Law will be financed, and all the assignments arising therefrom, especially the very system of rights that is guaranteed by it (Gassen, 2012, p. 13).

This brings some complexity to the political arena, since discussing how taxation takes place represents nothing more than engaging in a debate about how the social cost will be divided. If we also consider the other side of the coin, that of public spending, the debate is completed around the following question: who will pay and who will benefit from the State's financial activity (Gassen, D'Araújo & Gassen, 2020, p. 1044-1049)?

In a debate that claims to be democratic, we must be clear about the premises adopted and have the necessary transparency about the options that are at stake.

Even so, we have observed that the formatting of the Brazilian tax matrix has always been far from a debate about the fair distribution of the tax burden, resulting in a tax model that has historically been sustained on consumption as the main economic base.

If we take into consideration only the classification adopted by the Internal Revenue Service, such tax base would correspond in the year 2018 to 44.74% of the collection, against 21.62% for income, 4.64% for property taxation, 1.60% for financial transactions, and 27.39% for the taxation levied on payroll (Brazil, 2020b, p. 5).

Taxation in our country, therefore, is in disagreement with the principle of ability to pay, only because of the objective nature of taxation on consumption, which taxes individuals based on their consumption, not taking into consideration their willingness to bear the burden or not.

However, in addition to the non-observance of such principle, when we analyze the distribution of the tax burden among the different strata of our society, we have in the predominance of taxation on consumption a regressive structure, taken together, the tax burden on this tax base ends up proportionally burdening more the budget of the poorest families in our country, since they allocate a considerable part of their income to consumption

As well pointed out by Maria Helena Zockun (2017, p. 24), the difference in propensity to consume - that is, the ratio of consumption expenditure to household monetary income - observed between the poorest tenth and the richest tenth of the population is of the order of 2.28 times.

According to Zockun, while the richest families show a propensity to consume of the order of 0.547, the poorest families show consumption expenditures 1.249 times higher than their income.

It is precisely because of this distinct proportion between income earned and income consumed that the regressivity of the model adopted[1] would be revealed. This is because, if all families were subject to the same tax rate on consumption, the tax burden on the most vulnerable segments of the population would be 2.28 times higher than the burden borne by the wealthiest strata of the population.

And if the massive taxation on consumption makes the tax matrix regressive on the one hand, on the other hand, taxation on income and wealth, although revealing a progressive character, has historically proved insufficient to reverse the scenario (Silveira et. al., 2011, p. 46). In addition to having a reduced weight in the overall tax revenue, direct taxes grant a series of benefits that end up favoring the top of the social pyramid, such as the reduced burden on capital income, the low participation of urban and rural property taxes, or even the non-levy of Motor Vehicle Ownership Tax on signs of wealth commonly held by the elite, such as the ownership of boats and aircraft (Gobetti & Orair, 2016).

This analysis is corroborated by the report Grandes Números das Declarações do Imposto de Renda Pessoa Física - Ano Calendário 2018 (Great Figures of Individual Income Tax Statements - Calendar Year 2018), prepared by the Federal Revenue Service, which points out that the top of the Brazilian social pyramid collects, by way of Income Tax, proportionally less than the intermediate and lower positions. According to the IRS, the so-called super-rich correspond to an elite of approximately 26 thousand people who receive monthly income above 320 minimum wages. For these individuals the average effective tax rate, when considering the declarations by total income range, is limited to 1.9% of earnings (Brazil, 2020a, p. 9).

The consequence, then, is the regressive distribution of the tax burden among the various layers of our population, as seen in the table below:

1 In a similar vein, Higgins & Pereira (2013, p. 8)

**Table 1:** Participation of taxes according to the total income of the population - 2009.

| Participation of taxes according to the total income of the population - 2009 | | | |
|---|---|---|---|
| **Direct Taxation** | **Total Taxation** | **Tributação Direta** | **Total Tributos** |
| **1st** | 28% | 4% | 32% |
| **2nd** | 22% | 4% | 25% |
| **3rd** | 19% | 4% | 23% |
| **4th** | 18% | 5% | 23% |
| **5th** | 17% | 5% | 22% |
| **6th** | 16% | 5% | 22% |
| **7th** | 15% | 6% | 21% |
| **8th** | 15% | 7% | 21% |
| **9th** | 13% | 8% | 21% |
| **10th** | 10% | 11% | 21% |
| **Average** | 13% | 8% | 22% |

Source: Silveira et al. 2011.

Based on the estimate presented, the distribution of tax incidence considering the total income of the population confirms that the small progressivity of direct taxation in Brazil is insufficient to overcome the regressive effects of indirect taxation. Thus, when we analyze the cumulative effects of taxation, combining direct and indirect taxes, we can see that the portions of the population located at the base of the Brazilian social pyramid have their income proportionally more burdened than the upper strata.

The survey in question, which according to the IPEA report (2011. p. 5) at the time, sought to better capture the weight of indirect taxation on the budgets of low-income families, using, as a metric, the total income of Brazilian families. If we consider only monetary income, on the other hand, the level of regressivity tends to be even higher:

**Table 2:** Participation of taxes according to the monetary income of the population - 2009.

| Participation of taxes according to the monetary income of the population - 2009 | | | |
|---|---|---|---|
| **Direct Taxation** | **Total Taxation** | **Tributação Direta** | **Total Tributos** |
| **1st** | 47% | 6% | 53% |
| **2nd** | 30% | 5% | 35% |
| **3rd** | 25% | 6% | 31% |
| **4th** | 23% | 6% | 29% |
| **5th** | 21% | 6% | 27% |
| **6th** | 19% | 7% | 26% |
| **7th** | 18% | 7% | 25% |
| **8th** | 17% | 8% | 25% |
| **9th** | 15% | 9% | 24% |
| **10th** | 10% | 12% | 23% |
| **Média** | 15% | 10% | 25% |

Source: Silveira et. al, 2011.

By using household monetary income as the basis, the burden of indirect taxation on the family budget tends to increase, raising the total burden for the poorest 10% to 53% of earned income. According to Silveira and others (2011), this methodology does not consider the budget deficits reported in the Family Budget Surveys, leading to an overestimation of the burden of indirect taxation. However, the impact of indirect taxation on the formation of a regressive result for our tax matrix remains to be verified.

Even in studies that point to a greater neutrality in the distribution of the Brazilian tax burden due to the adoption as a proxy of a mix between income and family expenses[2], such as the one prepared by Siqueira, Nogueira, Souza and Luna, it is worth noting the high regressivity of indirect taxation, which greatly softens the redistributive impact of direct taxation:

2 For a critique regarding the different methodologies of analysis for the regressivity of consumption taxation, we suggest reading Silveira (2012. p. 33 to 35), Godoi, (2017b, p. 567); and Lahey (2019. p. 436).

**Table 3:** Participation of taxes according to adjusted income of the population - 2008/2009

| Participation of taxes according to the adjusted income of the population - 2008/2009 | | | |
|---|---|---|---|
| **Decimal available income** | **Indirect Taxation** | **Direct Taxation** | **Total Taxation** |
| **1st** | 15,4% | 0,3% | 15,7% |
| **2nd** | 14,7% | 1,1% | 15,8% |
| **3rd** | 14,5% | 1,8% | 16,3% |
| **4th** | 14,4% | 2,1% | 16,5% |
| **5th** | 13,7% | 2,7% | 16,4% |
| **6th** | 13,6% | 2,1% | 15,7% |
| **7th** | 13,3% | 3,2% | 16,5% |
| **8th** | 13,1% | 3,6% | 16,7% |
| **9th** | 12,7% | 4,1% | 16,8% |
| **10th** | 10,9% | 9,4% | 20,3% |

Source: Siqueira, et al. 2017.

Such analyses, by taking into consideration the different tax incidence according to each economic strata of our society, are extremely useful because they demonstrate the mistake of evaluating the onerousness of our tax burden based on absolute data, ignoring the socioeconomic reality and, especially, the deep inequality that marks us.

As warned by Fernando Gaiger Silveira (2012, p. 9-11), any criticism of the size of the tax burden, illustrated by initiatives such as the “taximeter”, “tax free day” and “keep an eye on the tax”, have emerged against a backdrop that seeks to weaken policies to promote social welfare and income redistribution, hiding the relatively small contribution made by the richest strata of society to the community.

This is because, even though the wealthiest families contribute the largest share of the country’s overall tax revenue, it is noteworthy how little contribution is made by this social group when considering their income appropriation. Based on data provided by the 2008/2009 Family Budget Survey and estimates prepared by Silveira (2012), Zockun (2017. p. 28) assesses that the contribution effort of the Brazilian population is decreasing in relation to the income bracket, revealing once again the regressivity of the system.

In other words, according to the author, the richest population groups tend to receive more because of the concentrated income distribution than they contribute to the total tax collection:

**Table 4:** Contributory effort in relation to income bracket

| Contributory effort in relation to income bracket | | | |
|---|---|---|---|
| **Decimal available income** | **Contribution of income class to total tax collection (a)** | **Distribution of total income (b)** | **Contributing effort of income class a/b** |
| **1st** | 1,6% | 0,7% | 2,14 |
| **2nd** | 2,4% | 1,7% | 1,42 |
| **3rd** | 3,1% | 2,5% | 1,25 |
| **4th** | 4,0% | 3,4% | 1,17 |
| **5th** | 4,9% | 4,5% | 1,09 |
| **6th** | 6,2% | 5,9% | 1,05 |
| **7th** | 7,8% | 7,7% | 1,01 |
| **8th** | 10,7% | 10,6% | 1,01 |
| **9th** | 15,6% | 16,1% | 0,97 |
| **10th** | 43,7% | 47,0% | 0,93 |
| **Total** | 100% | 100% | |

Source: Zockun, 2017. p. 28

The regressivity of our tax matrix is something flagrant and has been contributing to the reality in which we live, although this fact ends up not being reached by the perception of our society.

As we will see below, we understand that among the possible explanations for this lack of perception we can defend the existence of a strong illusory tendency in the State's financial activity which, among other results, would make it difficult for our population to understand the distribution of the State's financing costs.

## 3. THE THEORY OF TAX ILLUSION AND THE SOCIAL PERCEPTION OF TAX INCIDENCE

The phenomenon of fiscal illusion occurs whenever individuals pay to the public coffers without dimensioning the size of such contribution and the respective connection with the availability by the State of the public services it provides. Thus, fiscal illusion is responsible for the dissociation between the social perception of the State's financial activity and the respective reality in which such activity takes place. Classified by the literature as an instrument of government, the illusory strategies are usually directed in favor of the ruler, or the group that holds the power to influence him, which tend to use such subterfuges to reduce the resistance of other taxpayers to pay taxes, either by minimizing the perception of costs, or by maximizing the perception of the "results" of financial activity.

The study of fiscal illusion is, therefore, the study of this set of strategies that change the way individuals perceive the tax reality of a country and the costs of the public sector, determining not only their attitudes and behavior regarding taxes in general, but also deteriorating the very foundations that support a democratic regime. This phenomenon is studied as the object of research of a body of theory structured since the early twentieth century, which has been addressing over the years the serious socioeconomic and political consequences arising from this illusory reality, such as distortions in budgetary aggregates, impacts on the economic development of a country or even a growing distrust between the State and citizens (Mourão, D'Araújo & Araujo, 2020, P. 2).

Although controversial, the first notorious reference to the effects of a distortion of perception about the tax phenomenon has been credited to John Stuart Mill (Mourão, 2008; Sausgruber & Tyran, 2005), who in 1848 formulated what in public finance became known as Mill's Hypothesis for the tax illusion[3]. Part of the literature, on the other hand, seeks the origin of the understanding of the phenomenon in even older passages such as those contained in McCulloch in 1845[4], David Ricardo in 1820[5], Adam Smith in 1776[6], or even in the distant statement of Jean-Baptiste Colbert in the seventeenth century that the art of taxation consists in knowing how to pluck a goose by obtaining the maximum feathers with the minimum of screams (Stiglitz, 2013, p. 51).

While in these authors we find only reference to the phenomenon, it was in Amilcare Puviani[7], Italian financier of the late nineteenth century, that the analysis of fiscal illusion gained its first systematic study, with a detailed look around the financial mechanisms available to dominant groups to reduce the resistance of the dominated portions of society in the general contribution to public coffers.

3 "Perhaps ... the money which [the taxpayer] is required to pay directly out of his pocket is the only taxation which he is quite sure that he pays at all. ... If all taxes were direct, taxation would be much more perceived than at present; and there would be a security which now there is not, for economy in the public expenditure." (Mill, 1994., p. 283).

4 Dollery & Worthington, 1996. p. 262.

5 In short, while Ricardo perceived that the-two major methods of financing a war (i.e., taxation vs. issuance" of public debt) are equivalent "in point of.economy," he recognized that taxpayers suffer what we now call "fiscal illusion." (O'Driscoll, 1976. p. 2).

6 "If we go back to the classical economists and look at the canons of taxation laid out by Adam Smith, we find that 'convenience' to the taxpayer is one norm. Taxes should be so levied as to make the payment as convenient and as commodious as is possible. This norm has been repeated in many manuals. It is not surprising that this norm of convenience should come close to that which motivates the ruling class in the Puviani conception. If we look at those institutions which have come to be accepted primarily because of the convenience criterion, these lend themselves to examination under the Puviani model. (Buchanan, 1999. p.137).

7 Amilcare Puviani was an Italian financier who lived from 1854 to 1907. He graduated in law in Bologna in July 1870, moving to Rome afterwards, where he devoted himself to legal practice. In 1880, however, he abandoned his career as a lawyer to teach political economy at the University of Bologna. At the same university, he became professor of financial sciences and financial law. In 1889 he passed the competition to become professor of political economy, statistics and financial sciences at the Royal Technical Institute of Perugia. In 1890 he passed the competition for professor at the law faculty of Perugia, where he remained until his death. His work was hampered by a serious eye disease that led him to almost total blindness. However, he continued to develop an intense activity of study, documented by his publications. Throughout his life he remained connected to his native country, where he died on September 12, 1907. (Dallera, 1987).

In his work, Puviani discusses the process of forces that act on the taxpayer's consciousness, diminishing their perception as to the amount and importance of the sacrifices they bear and exaggerating the extent and advantages of the public services that are offered by the State in return.

Starting from the understanding that illusions in general refer to a misrepresentation of phenomena of nature in our minds, Puviani inserts the idea of fiscal illusion as part of a set of political illusions[8] that would assist in the misperception of the "masses" regarding the purposes and activities performed by the State (Puviani, 1972, p. 11).

Thus, by fiscal illusion - or as stated in the original work, financial illusion[9] - we should understand it as a category of perceptual errors by the taxpayer-elector about the means used by the political entity to achieve its goals, more specifically related to the dimensioning of revenues and public spending (Puviani, 1972, p. 11). In other words, the idea of fiscal illusion is composed by this systematic set of mistakes that distance the mental representation of the collectivity from the reality of the financial activity, altering both the social cost perceived in relation to the existence of the State, and the extent of the exact fruition of the utilities it makes available to the population in general.

The fiscal illusion is inserted, thus, as a response to the problem of minimizing the resistance of taxpaying citizens in relation to the fulfillment of their tax obligations for the purpose of financing the public machine[10]. For Puviani, illusory mechanisms would arise to the extent that the ruling group would seek to soften the perception of the impact of tax collection, especially through strategies that mask or anesthetize the tax burden borne by the dominated portions of the population, while maximizing the sensation about public spending. The fiscal illusion would act to reduce the subjective cost, the perceived tax burden, enhancing the perception of usefulness of the State for the taxpayer-elector, so that the public administrator, at least in appearance, would be doing more with less (Puviani, 1972, p. 22).

In the words of Álvaro Bereijo (1972, XII), translator of the work into Spanish, the theory explains how the dominant strata, through the Treasury, conceal from the masses the large portion of the tax burden they bear, making them believe that the tax burden is lower than that levied. In this way, the inequality in the distribution of the tax burden among the different groups would be masked under the cloak of an alleged justice, giving the poor the false impression that they would bear a lower

8 One can notice here, a connection of the vision shared by part of the Italian doctrine of the time to insert the financial activity within the political tradition of Machiavelli. According to G. Schmölders (1975, p. 20), such influence could be perceived from the very concept of psychology adopted by Puviani, which, as we shall see, reflected a hedonistic assumption of the economic agents.

For an analysis of the various uses and names given to the phenomenon, see Mourão (2008, p. 28-31).

9 For an analysis of the various uses and names given to the phenomenon, see Mourão (2008, p. 28-31).

10 "Puviani's proposal is more a theory of fiscal reaction than a theory of fiscal choice. The neoclassical formulation of taxation as "least aggregate sacrifice" is reformulated in the form of the ruling class finding ways to minimize taxpayer resistance to paying taxes and transferring them to the rulers. The main objective of the ruling class is to give the impression that it is taxing less and transferring more public investments to the taxpayer" (Silveira, P. 2009. p. 32)

tax burden than the richer portions of the population, while the more affluent would have the opposite impression.

It is important to point out that the origin of the Tax Illusion Theory is inserted in a dualistic view of society typical of the sociological tradition of the Italian public treasury[11], in which the dominant class, through the state structure, exercises its political power over an amorphous dominated mass without the latter being able to perceive[12]. The greater the ignorance on the part of the taxpaying population of the level of taxes collected, as well as the more frequent the occurrence of a whole set of fiscal maneuvers used by the collecting state, the greater would be the level of fiscal illusion.

Among the forms of tax illusion, Puviani highlights that the very tax imposition can obscure the understanding of the voter taxpayer, since there is no clear connection between the amount of funds collected and the spending required to provide public goods and services. To this end, the dominant group could use a series of tricks to deceive this perception, such as the use of revenues derived from the exploitation by the public entity of its own assets, the use of indirect taxation included in the final price borne by the consumer, or even the occurrence of inflation.

Another way to create a false perception would be to link the tax levy to events or situations that are favorable or pleasant to the taxpayer, thus softening the negative perception that paying taxes usually has among the public opinion. Or resorting to a kind of terror tactic, in which the administrator points to supposedly calamitous scenarios to justify the imposition of new tax figures.

Puviani also highlights the illusion inherent in a complex tax system, composed of various tax figures that pulverize the tax burden borne. Given such a framework, it would be more difficult for the taxpayer to measure the size of the tax burden than if there were few charges distributed over the manifestations of his wealth.

Although initially it did not have much impact among public finance scholars, from the second half of the 20th century on, the work began to have greater repercussion, influencing much of the analysis developed since then around issues involving the idea of fiscal transparency and the responsibility of the public administrator towards society.

James M. Buchanan is one of these authors. Contextualizing Puviani's work from the Italian Fiscal School, Buchanan (1999, p. 129) credits him with the merit of not starting from the premise that

11 In this sense, commenting on the tradition of the Italian school of public finance manifested in Puviani's work, we suggest, among others, reading Bereijo (1972), Buchanan (1999), Mourão, (2008) and Tanzi (2011).

12 When contextualizing the theory of fiscal illusion within the history of economic thought, Bereijo even draws parallels with the Marxist perspective of historical materialism, to classify it within the so-called historical economism, as "that theory according to which 'the economic factor exercises a determining and decisive influence over the social constitution, and society is divided into a dominant class, formed by the owners of the land, by the owners of moveable capitals and by the entrepreneurs, and of industry and commerce. De acuerdo con esta premise, la Hacienda del Estado serviría a los intereses de la clase capitalista, que mediantes el impuesto, imputado todo lo más posible a las proprias necesidades, preocupándose muy poco de las demás clases de la sociedad." (Bereijo, 1972. P. Xxix).
However, it should be emphasized that we cannot place Puviani's analysis entirely within the Marxist tradition, since there is no clear identification between the dominant classes and the economic reality as a fracturing element of the society divided into rulers and ruled. Cf. Buchanan, (1999. P. 128); Mourão, (2008. P. 17); Silveira, P. (2009. P. 31).

fiscal illusion would be a goal to be necessarily achieved by governments, but rather an instrument available to be used to reduce society's resistance to pay taxes, allowing the remodeling of fiscal policy.

Contributing to the debate regarding fiscal illusion, Buchanan (1999, p. 126) points to the need to differentiate the behavior of voters under fiscal illusion from the biases caused by uncertainty or ignorance. Although both situations move public policies away from the optimal point, Buchanan points out that it is inappropriate to classify the choices made through illusions as irrational, since the voter subjected to the illusory structures will act consistently when called upon to choose a government platform, even if based on false premises. For the author, such differentiation is important to understand that public managers can shape social behavior by adopting illusory structures, inducing the electorate to make choices directed by them. In other words, it reinforces the idea that fiscal illusion is a governing tool available to the holder of political power.

For the American financier, the importance of analyzing the theory of fiscal illusion lies in the observation that even if truly democratic structures are adopted, as opposed to the monopolistic state typical of the Italian tradition, it will be possible to observe the existence of illusory practices. Thus, Buchanan emphasizes the need for the scholar of public finances to focus on the analysis of how illusory structures occur within the public budget, both from the perspective of revenue and expenditure, leaving aside the investigation of the reasons that lead the manager to adopt such measures.

For the American author, one of the main effects of the illusion would be the oversizing of public spending, with the consequent expansion of the state apparatus. According to James Buchanan, together with Gordon Tullock (1999. p. 171), the democratic system would favor an inherent increase in the public sector, given that the choices regarding the level of public goods desired by most voters would not take into account that the distribution of costs occurs among all members of society, even those who do not benefit from the supply of such good, or even those who do not want it[13]. The process would be further aggravated in hypotheses in which individuals are not fully aware of the costs involved, largely caused by the lack of visibility of taxes or even by public debt structures.[14]

Turning to the analysis of how the tax illusion would occur nowadays, Buchanan listed among such measures the possibility of withholding at the paying source the amount related to income taxation; the confusion common to the taxpayer as to the rate to which he is subject within a progressive table - whether the marginal rate or an average rate; the taxation levied on legal entities to the detriment of that levied on individuals; and taxation by means of average rates and that levied on capital

13 On this point, Paulo Caliendo (2009, p29) also analyzes such position from the so-called Wicksell's unanimity, in which the majority voting rule is criticized: "Wicksell also pointed to the imperfections of electoral systems in modern democracies, since in some situations a voting majority can force a minority to carry the fiscal burden on programs that will not necessarily be useful to that minority. Thus, he advocates a system of unanimous voting as a way to prevent some individuals from transferring the cost of their decisions to other individuals (Wicksell's unanimity)."

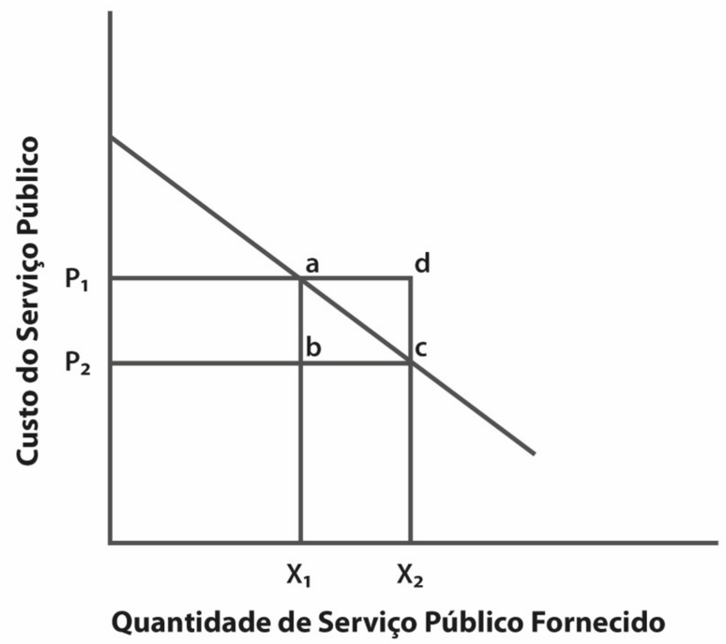
14 Opposing such a view, that the democratic system represents an undesirable oversizing of the public sector, Richard and Peggy Musgrave (1980. p. 98) assert that "the public is quite likely to receive an amount of public services consistent with its desires, and those who judge this level deficient or excessive would represent exceptions to majority preferences, rather than evidence that the political process is inadequate to express such preferences."

gains. For him, all these structures tend to contribute to the formation of a misperception by the taxpayer about the tax incidence.

This line of analysis, well developed in Richard Wagner (1976), was shared by a considerable part of the later literature, which began to analyze budget aggregates to empirically demonstrate the occurrence of fiscal illusion[15].

According to Wagner, the role of fiscal illusion in the expansion of the public sector would occur from the distortion caused in the perception of individuals regarding the costs of public goods made available to society[16]. For the author, based on this misunderstanding, individuals would underestimate the "price" of public services, demanding a higher level of benefits than they would pay if they knew the real expenditure necessary to maintain such a public apparatus, which could be demonstrated from a supply and demand curve:

**Figure 1:** Cost of Public Service X Quantity of Public Service Provided




Fonte: Source: Author based on Wagner (1976, p. 54)

Where "P1" is the real cost of the public service, "P2" is the price socially perceived due to the incidence of fiscal illusion; "X1" is the optimal public service provision if the population knew its real price, and "X2" is the level of service effectively demanded by the population when subjected to fiscal

15 As to the point, the works of Oates (1988); Dollery & Worthington (1996) and Afonso (2014) summarize such currents well.

16 "This paper has examined a proposition that has long lingered in the back waters of fiscal analysis, viz., that the structure by which revenues are raised can affect taxpayer perceptions of cost, thereby generating a change in levels of public expenditure. In addition to exploring the underlying conceptual foundations, this paper has brought some empirical evidence to bear on the theory of fiscal illusion" (Wagner, 1976. p. 45-61).

illusion. Thus, while individuals demand public services believing they are at point "c", they are actually at point "d", bearing the excessive cost of a public sector unduly expanded due to misperception.

Like James Buchanan, the contribution of Richard Wagner to the development of the theory is relevant in view of having laid the foundation for a series of studies that attempted to analyze the increase in the public sector as an indication of the existence of illusion, correlating such expansion with the occurrence, to a greater or lesser extent, of elements that prove the occurrence of the illusory phenomenon (Afonso, 2014, p 221).

From this research stem, the studies that have focused on the analysis of the phenomenon of tax illusion through five basic manifestations, arising from: (i) the very complexity of the taxation model adopted, in which the fragmentation of the tax burden in the most diverse tax figures tends to divert the focus about the real tax burden; (ii) the elasticity of tax revenues, which would automatically grow according to an eventual increase in the country's Gross Domestic Product; (iii) the hypothesis of tenants' illusion, a phenomenon associated with the so-called tax obfuscation, or even liable to be observed to a certain degree in indirect taxation (Mill's Hypothesis), in which the normative design of the tax figure sometimes hinders the perception of who bears the tax burden, and sometimes causes the burden to be reflected in the consumption chain; (iv) the illusion caused by the financing of state expenditure through public debt, which would basically postpone social costs to a future moment; (v) the so-called flypaper effect, which is nothing more than the mistaken perception of increased public revenue caused by intergovernmental transfers, which would result in a predisposition to increase spending[17].

Fiscal illusion, therefore, becomes associated with the notion that the systematic misperception of the main fiscal parameters can significantly distort the choices made by the electorate to size up the public sector and the level of services it makes available (Oates, 1988, p. 65). Still, the lack of a greater systematization of studies - especially involving the contributions of behavioral economics (McCaffery & Baron, 2003. p. 435) - or even the difficulty of isolating the results of the analysis to prove the connection between fiscal illusion and the increase in public spending have been pointed out as the greatest difficulties for this field of research.

As warned by Wallace Oates, viewing the phenomenon exclusively linked to a verification of the expansion of expenditures stems from the fact that many of these studies sought to characterize fiscal illusion as a cause for the increase in public spending, disregarding other possible factors that, acting in parallel, could justify such an expansion. Or they do not consider that for certain situations the existence of figures considered illusory could be the consequence, and not the cause, of the expansion of the public sector[18].

17 For a summary analysis of each type of fiscal illusion, we suggest reading Dollery & Worthington (1996) and Wildowicz-Giegiel &Kargol-Wasiluk (2020).

18 In this sense, Wallace Oates (1988, p. 78) states that: "the general grounds on which I have expressed reservations

Such analyses connected the manifestations of the illusion to an increase in public spending, without verifying whether, in fact, society would be subjected, or not, to an "illusory" framework[19]. The approach under this perspective would not be precise in the attempt to isolate fiscal illusion as a measurable phenomenon, lacking empirical evidence distinct from the simple analysis of budget aggregates. As we will see below, such concerns have guided subsequent studies that seek to demonstrate the occurrence of the phenomenon in several countries.

Another criticism we make to this way of looking at fiscal illusion stems from the pejorative view given to the State and public spending. This is because, at first, such observation seeks to defend in the expansion of the public sector something necessarily negative, or at least something that would not be desired by an enlightened society. In a way, it erroneously ignores the possible predisposition of individuals to a higher level of public investment. Especially when these are enlightened, not only of the costs of a given utility made available by the State, but also of the advantages that this service represents for the entire collectivity.

In this sense, the study of fiscal illusion tends to contribute to a better understanding of how this state action is financed and to what extent the collective effort is being directed in our society.

Much more than a mere concern with the allocative efficiency of the wealth of a nation, the original idea of fiscal illusion is inserted in an analysis of the perpetuation of power relations, in which the State, and the consequent financial activity, end up becoming mechanisms of income concentration in favor of the ruling groups. Although Puviani (1972, p. 203-207) emphasizes the expansion of state bureaucracy as one of the consequences of fiscal illusion, including to accommodate the interests

about the existing econometric findings are two: endogeneity of the illusion variables and alternative explanations of the results. These are such commonplace objections to econometric studies that one might regard them as a 'cheap shot'. It is typically not hard to find some grounds for questioning the exogenous nature of an independent variable. Moreover, as we all know, statistical associations do not demonstrate causation - there is always room for another hypothesis. While this is true enough, the issue is really one of judgment and additional evidence. How compelling is the other explanation for the observed result? How likely and how serious is the potential endogeneity of the suspect variable? It is my sense, as I have tried to indicate in the paper, that these are probably serious matters in the fiscal-illusion literature. The likelihood of endogeneity in certain cases like the revenue-complexity hypothesis seems to me quite high. Further, the alternative explanations of several the findings strike me to be at least as persuasive as the illusion rationale. In short, I think that there really are sources of serious reservation that suggest the need for further, carefully designed empirical testing both to deal with the endogeneity issue and to distinguish among the various hypotheses.

19 On this point, an interesting analysis is elaborated by Søren Winter and Poul Erik Mouritzen (2001. p.111.) when investigating through a social experiment the effects of fiscal illusion on the perception of costs of public services provided. When discussing the empirical studies that seek to confirm the existence of fiscal illusion, the authors make the following criticism: "In most studies the theory has been tested by examining the relationship between some proxy for the complexity and/or invisibility of taxes on the on hand and public expenditure growth in various political systems (including local governments) on the other. While some empirical research has supported the theory (Wagner 1976; Pommerehne & Schneider 1978; Kristensen 1987), other studies have found no support for it (Munley & Greene 1978; Clotfelter 1976; Lowery & Berry 1983). However, this way of testing the theory presupposes a causal chain with a very large number of links (Sørensen 1992: 284), and the question of underestimation of costs and its consequences for the demand for public services is not directly tested. Although tax systems may vary in complexity and visibility, it may be the very separation of provision and funding of any tax-financed public service which makes people underestimate the costs.
Therefore, we aim to provide a much more direct test of the fiscal illusion theory at the level of the individual citizen. We examine the claim that citizens do underestimate the costs of public services, and that by underestimating these costs they demand higher levels of public spending and develop more inconsistent spending and tax preferences than if they had been better informed."

of the wealthier classes, gaining their support by reducing eventual resistance to financial activity, it is also possible to verify a certain nonconformism of the author with the blocks promoted to the promotion of redistributive justice. The fiscal illusion, thus, already for Puviani, would keep some connection with the maintenance of structures of inequalities, although the author recognizes that society is subject to different degrees of the same illusory phenomenon.

Therefore, in scenarios such as the present, in which growing social inequality jeopardizes the very concept of democracy, the re-contextualization of the Fiscal Illusion Theory becomes increasingly necessary. Investigating fiscal illusion as a permanent instrument of government, which preexists all State models, including democratic ones, may shed light not only to dispel doubts about the population's perception of the cost of the State, but also to investigate to what extent possible illusory strategies are working in favor of hegemonic interests in our society.

To contextualize the choices around the tax phenomenon based on this idea of fiscal illusion allows us, much more than stating that taxes distort the allocation processes, to elaborate a critical analysis about how close we are to materialize, or not, the project of a democratic, free, fair, and solidary society, as advocated in our constitutional text.

## 4. THE MISPERCEPTION CAUSED BY FISCAL ILLUSION

Based on the definition provided by Amilcare Puviani, which has guided the literature on fiscal illusion, it is important to highlight the recent evolution of studies that seek to demonstrate the existence of this phenomenon, either through interviews with the objective of collecting the opinion and perception of members of society regarding the costs of the State, or through theoretical experiments that seek to isolate and measure the effects of each of the variables that exist around fiscal illusion itself.

Although they vary in relation to the method used, these surveys help to understand what would be the determining elements to bring closer - or move away - individuals from a coherent understanding of the tax phenomenon with the reality of tax activity. As we pointed out above, public opinion is important in a democratic regime, playing a strong role in limiting government action, especially when taxation and public spending are involved. Therefore, researches such as the ones presented in this topic help not only to understand how the dissociation between perception and reality of the state's financial activity - caused by fiscal illusion - takes place, but also the possible impacts it may have on the political conformation of a country.

As an example of such research, Tino Sanandaji and Bjorn Wallace (2010) conducted an important study in Sweden about the perception that society has about the tax phenomenon. The research starts from the premise that the structuring of a tax matrix can lead to an underestimation of the costs of public spending, with society not being fully informed about the extent of the tax burden.

Conducting a series of interviews in which they sought to gauge the social perception regarding the weight of each tax base in the national tax collection and in household budgets, the authors argued that the tax illusion existing in Sweden would reflect not only the tax complexity inherent in a system with several taxes, but mainly the existing misperception about tax incidence, caused by structures that tend to mask the actual distribution of the effective burden among the various social strata, even if it were possible for the population to estimate the size of the burden. This is because, even if the respondents knew how to dimension the tax burden, the Swedish population's misperception would be related to which social strata would bear each tax, a phenomenon that Sanadaji and Wallace called typical of tax obfuscation.

Another relevant research to understand fiscal illusion was developed by Rupert Sausgruber and Jean-Robert Tyran (2005), in which, through an experiment that idealized a perfect exchange market, they subjected 80 individuals to analyze the anesthetizing effects of indirect taxation.

Confirming Mill's Hypothesis, the authors concluded that the tax burden resulting from an indirect tax system is cognitively more difficult to perceive than a direct tax system simply because indirect taxes tend to be passed on to final consumers through the price system. Thus, taxpayers-electors would tend to disregard such values when calculating the benefits received by the state activity, thus distorting the demand for public spending and services.

Also seeking to demonstrate how the format of taxation can affect the social perception of the tax burden, Aradhna Krishna and Joel Slemrod (2003) evaluated to what extent illusory structures can be used by the public administration to garner greater popular support for policies by manipulating the understanding of the distribution of tax incidence. Based on the prospect theory of Daniel Kahneman and Amos Tversky (2012) and comparing the way tax incidence is presented to empirical results obtained by marketing research on the presentation of prices to consumers, the authors concluded that it would be possible to manage this social perception based on the way taxes are presented to taxpayers.

The results obtained by Aradhna Krishna and Joel Slemrod about the performance of cognitive deviations caused by tax illusion were also reached by McCaffery and Baron (2003).

These authors argue that the social perception of tax incidence would be subject to a wide variety of biases like those existing in private markets. Such cognitive biases would cause individuals to misunderstand the tax phenomenon of a country, which would lead to severe inefficiencies and inequities arising from the interactions between political systems and such cognitive errors.

The authors also warn that the absence of control over the actions of the State, which has no arbitrators to correct such deviations, would lead us to believe that the permanence of this misperception about the tax phenomenon would persist over time. This given that there would be a stimulus to the unrestrained propagation of anesthetizing tax figures, since the public in general cannot, by itself, identify exactly how these hidden costs that finance the State are distributed.

According to McCaffery and Baron (2003, p. 434), the generalized complexity of the subject, the limited benefits for people to have a satisfactory knowledge about how tax incidence is distributed, and the absence of an effective instrument that provides such clarification are the main reasons why the social perception of the tax matrix is so susceptible to biases.

Thus, based on these premises, the authors investigate a series of cognitive biases observed among taxpayers, such as a greater propensity to accept tax progressivity when it is presented from relative rather than absolute values, or the so-called isolation effect, in which taxpayers, when asked about a change in the country's tax matrix, tend to focus on the isolated change and ignore the eventual systemic impact of the measure.

Another seminal study on the issue was developed by Chetty, Looney and Kroft (2009), in which they empirically analyzed consumers' reactions to indirect taxation, concluding that they do not react as expected to taxes that are not presented prominently. In this study, the authors demonstrate that when the value of taxes on the consumption of goods is not explained, they end up being completely ignored by consumers when purchasing the respective items.

Massarrat-Mashhadi and Sielaff (2012) sought to assess the ability of taxpayers to assess the tax burden on income. Through interviews with 289 German workers, the authors sought to identify to what extent the level of education and knowledge of the German tax system would influence such perception. It was found that the increased complexity inherent in the German tax system is closely associated with the difficulty of perception of the tax burden borne. Thus, it was concluded that, contrary to what is advocated by traditional literature, taxpayers may not have available the information regarding the functioning of the system, nor the cognitive ability necessary to proceed with such perception. The research then suggests the need to obtain a greater simplification of taxation in that country, without neglecting the need to seek the promotion of tax justice, usually linked to complex tax structures that meet the social particularities.

Finally, consolidating the various studies about fiscal illusion, an approach that deserves special mention is the one that seeks to create an index to measure fiscal illusion in different countries. Based on the literature already consolidated around the phenomenon, such studies aim to identify the characteristic elements of illusory strategies in the most diverse realities.

Along these lines, we highlight the work developed by Dell 'Anno and Mourão (2012), in which they investigated data from 47 countries through four common elements for identifying fiscal illusion (tax revenue concentration index; direct and indirect taxation ratio; public budget balance; and public debt to gross domestic product ratio) and six potential causes considered by the literature to be responsible for the phenomenon (ratio of self-employed workers to employed population; size of the tax burden; misperception of tax rates; levels of freedom of speech and freedom of the press as a means of exerting political pressure; instruments of media control by the State; society's ability to correctly evaluate the beneficiaries of tax reforms or public spending programs based on the educational level of the population). With these variables in mind, the authors analyzed the magnitude of the phenomenon of fiscal illusion in different countries, to confirm a correlation between causes and indicators, as well as to trace similarities and differences between the different realities observed.

The results found in the research indicated a positive correlation between the indices identified and the indicators pointed out by the literature as typical of illusory strategies. Comparing the indices of the different countries investigated, the authors observed that fiscal illusion would be more severe in countries with recent democracy, such as those found in Latin America, Asia and Africa, than those located in North America and Europe. They also found that the levels of perceptual distortion tend to decrease with the passage of time and the consolidation of institutions[20].

These results confirm in part the research already conducted by Mourão (2008), regarding the interference of fiscal illusion in the ability of societies to supervise public agents. In this sense, the author emphasizes that the level of fiscal transparency is generally connected to the existence of a strong parliament within a democratic structure, being completed such oversight capacity by the educational level of the electorate, the possibility of civic intervention by society, the level of media development and respective access by the population to quality information and, finally, how the pattern of priorities defined by the public agenda meets the expressed interest of voters. The recurrence of illusory structures would thus be associated with the democratic maturity of each society, so that realities that presented a more consolidated democratic structure would tend to observe lower rates of fiscal illusion than more recent democracies.

Another prominent point warned by Mourão, and confirmed to some extent in Dell'Anno and Mourão, concerns the connection between the economic development of countries and the levels of fiscal illusion presented. According to the Portuguese researcher, countries that present higher levels of development tend to reduce the incidence of illusory structures, making use of a more transparent and responsive budgeting process.

The identification of the causes and indicators of fiscal illusion pointed out by Dell'Anno and Mourão are especially relevant in our study, precisely because they lay the foundations for identifying to what extent different social groups could be subjected to different elements that are characteristic of fiscal illusion. Based on a society in which direct and indirect taxes are distributed differently, for example, depending on the social stratum under analysis, it would be possible to theoretically assess different tax illusion indexes.

The same effect could be observed if we take into account other distinctly distributed social characteristics, especially in unequal societies like ours, such as educational levels and access to information. This is in line with what advocated by Günter Schmölders (1965); Kay Blaufus and others (2015) and Winter and Mouritzen (2001), for example. Or even in the origin of the term, when coined

20 "From this analysis, we find evidence that Latin American policy makers exploit greater fiscal illusion stratagems to distort taxpayers' perceptions of their tax burdens than do policy makers in other regions of the world." (Dell'Anno & Mourão, 2012. p. 289).

by Amilcare Puviani (1972), who, when discussing the different types of errors to which the population is subjected in terms of tax perception, focuses on how rich and poor usually perceive differently the distribution of the tax burden.

## 5. HOW FISCAL ILLUSION MANIFESTS ITSELF IN OUR TAX MATRIX

In the present topic, the general lines of some of the illusory strategies that can be identified in the Brazilian tax matrix will be presented, based on the above considerations.

To this end, an important contribution is provided by Vito Tanzi (2011, p. 156), who, within the theoretical tradition of fiscal illusion, by listing the main ways a government can make use of such strategies, has contributed to transport the study of the phenomenon to current public finance practices. Among the methods listed by Tanzi, in the field of tax collection, are the preference of governments for cascading taxation, with taxes levied on other taxes or even on themselves (the so-called calculation by inside), the option for tax reforms that only maintain the taxes already known, without profoundly changing the matrix as a whole and proceeding with adjustments intended to benefit certain groups (which would make the system as a whole much more complex), and, finally, the preference for taxes that have economic repercussions and are embedded in the prices of goods and services.

For the reader familiar with the subject, it is possible to observe that the classification adopted by Tanzi describes, in general terms, various choices in the Brazilian tax matrix. Even so, we will now address the reasons why we believe that the structuring options of our taxation have elements that are typical of an illusory phenomenon.

### 5.1. THE COMPLEXITY CAUSED BY FRAGMENTATION

First, we must highlight the contribution arising from the very complexity of our tax matrix, which, composed of numerous tax figures, tends to mask the real perception that this is shaped from three economic bases of incidence - income, wealth and consumption. The multiplication of different tax figures that fall on the same base, fragmenting the tax revenue already impacts the lack of transparency of state funding, because, as the literature warns, it does not allow the exact understanding of which taxpayer is taxed as the owner of assets, as the consumer of goods and services, or as the acquirer of income.

According to Wallace Oates (1988. p. 69), the revenue complexity hypothesis is associated with the observation that the more fragmented the way a country's public revenue is collected, the more difficult it is for taxpayers to understand the connection between the tax collected and the price of public services made available to the population. The scenario would thus contribute to an underestimation of social costs and the impact on public choices around the size of public spending.

The phenomenon, already reported since the beginning of the studies on fiscal illusion by authors such as Puviani (1972, p. 33-35) and Buchanan (1999, p. 135), gains new life in the analysis of Richard Wagner regarding the measurement of revenue fragmentation and its role in the level of public spending. According to Wagner (1976, p. 52), the plurality of tax figures would impose an increase in informational costs to taxpayers, making it difficult for them to measure the weight of the tax burden and, consequently, interfering with the level of public spending. Analyzing the data of the fifty largest American cities in the years 1960/1970, Wagner concluded that in those localities where revenue was more concentrated in a few tax figures, total public spending would have been lower than the spending observed in municipalities with greater revenue fragmentation.

Studies endorsing the illusory role of revenue complexity are, among others, those prepared by Vito Tanzi (2013), Heyndels and Smolders (1995), Dollery and Worthington (1999), Haug (2009), and Massarrat-Mashhadi and Sielaff (2012), who, even from methodologies different from those used by Wagner, achieved similar results regarding such illusory factor.

In the Brazilian case, the complexity is observed from the five "families" of existing taxes - taxes, fees, improvement contributions, special contributions and compulsory loans - distributed among the three federative spheres according to the competence delimited by the constitutional text. Such figures may affect the three economic bases mentioned above, resulting in overlapping incidences and, consequently, complexity.

These five species are subdivided into a series of other tax figures, which, according to the Federal Revenue of Brazil, would reach more than 35 different taxes (Brazil, 2020, p. 16). Considering the weight that each of these incidences has in the collection, for the year 2018 the top four positions in terms of revenue - Tax on Circulation of Goods and Services (20.92%), Income Tax (18.11%), Social Security Contributions (16.29%) and Contribution to COFINS (10.66%) - would concentrate 65.98% of what raised by the federated entities, being these figures the only ones with shares above 10 percentage points in the overall load. The other 34.02% of the revenue was obtained from all other taxes, which include taxes and contributions from the three spheres of the federation. The scenario, by itself, points to the high fragmentation of the collection in our country, since, besides the main tax being a state tax, which causes its regime and collection to be fragmented among 27 federative units, we have one third of the tax burden divided among 31 tax figures from the three spheres of the federation.

Added to this perspective is the plurality of rates among these taxes, which tends to make it difficult for the taxpayer to understand the size of the tax burden.

Although it is important to clarify from the outset that we do not advocate simplification per se, in line with the concern espoused by Massarrat-Mashhadi and Sielaff (2012, p. 19-20) regarding the reflections in terms of systemic equity of the tax matrix, we cannot ignore the difficulty that the framework induces for the understanding of the effective tax rate, whether on income or consumption.

An example regarding the effects of tax revenue fragmentation in Brazil can be obtained from the study prepared by Jevuks Matheus Araujo and Rozane Bezerra Siqueira (2016, p. 216), who, when analyzing data from 5249 Brazilian municipalities for the year 2010, found that the more complex and less visible taxation in that locality, the greater the demand for public spending and growth of the public sector. It is possible to observe in this study findings like those found by Wagner (1976) and Heyndels and Smolders (1995) abroad.

## 5.2 INDIRECT TAXATION

In continuity, we must evaluate the role of the exacerbated indirect taxation to verify the occurrence of fiscal illusion in our country. This is because, when at stake is the materialization of a mistaken perception regarding the distribution of the tax burden among the layers of the population, we should give special emphasis to our historical option for structuring the Brazilian tax matrix around consumption taxation.

As previously mentioned, approximately half of what is collected in our country is based on the consumption of goods and services by the population. If we also consider other tax figures that tend to have an economic impact on the productive chain, by means of the price system, such participation in the tax collection is even more significant.

In comparative terms, while in 2017, the average taxation of goods and services in OECD countries corresponded to 32.17% of the tax collection, in Brazil, only under the consumption heading, we reached a level of 44.27% of the global tax burden (Brazil, 2020b, p. 9). Considering the list of OECD member countries, this level of taxation placed our country as one of the countries that most taxed this tax base in that year, reflecting a historical series that has not changed at all.

It is necessary to point out that, when referring to this tax base, we are analyzing the charges levied on the consumption of goods or services. Thus, even if the State chooses to dismember the collection of the charge through a multiphase collection, as observed in countries that adopt the value-added tax system, as is the case of Brazil, the manifestation of wealth apt to be taxed is only the final acquisition of that good or service (Musgrave & Musgrave, 1980, p. 282).

Thus, regardless of the form or phase in which the tax collection takes place, the respective economic burden ends up indirectly reaching the final consumer (Gassen & Valadão, 2020, p.196). And for this reason, this taxation method is commonly classified as indirect taxation, in which the tax cost is reflected in the production chain through a pricing system, incorporating the tax as an operation cost and burdening, in the end, a person other than the one legally responsible for collecting the amount[21].

21 "In principle, a tax on consumption is a tax that is levied on economic activity, regardless of its result, whether positive or negative. Whether there is profit or not, surplus or not, these taxes, also called indirect taxes, obligatorily harvest that activity (since they are levied on turnover or gross income; salaries paid or payroll; gross sales value of goods and services). The economic entrepreneur collects such taxes to the State, considering them as a cost of the activity, for which reason he strives to transfer the amount paid to the tax authorities, embedding them in the prices of the products and services sold, that is, he strives to recover such cost (as well as the value of the rents paid, of the leases of machinery, of salaries, etc.). Therefore, in principle, it is the purchaser or consumer who suffers the tax burden transferred in the prices of the goods and services he buys. Hence the name consumption tax or indirect tax, since the de facto or financial taxpayer is not part of the tax relationship vis-à-vis the Treasury. He is only a third party, the consumer." (Godoi & Derzi, 2016. p. 541).

Such note leads to the highlighting of another characteristic point of the choice of consumption as the main economic basis of our tax system: the legal mechanism of tax repercussion, associated with the fact that it is a form of objective taxation, hinders the verification of the contribution capacity of the final consumer, effectively responsible for presenting the presumed sign of wealth to be burdened. This occurs because, when different individuals with different contribution capacities purchase the same good, both subjects will be, as de facto taxpayers, subject to the same tax burden. However, if they have different incomes, the tax burden will be felt more by the one with lower purchasing power (Gassen & Valadão, 2020, p. 197).

The picture worsens if we consider, as explained above, that low-income people direct most of their few resources to consumption, with no room for eventual savings or wealth accumulation. Thus, when a tax matrix is structured around consumption taxation, the result is an exacerbation of its regressivity (Musgrave, 1972, p. 426). Those located at the bottom of the social pyramid contribute proportionally more, even in situations where they do not even have income or assets eligible to be taxed.

And they contribute without being aware of it, given the low degree of transparency caused by such a choice. In contrast to direct taxes, which have a nature considered "irritating", consumption taxation ends up presenting itself as anesthetizing, precisely because it prevents the assessment of the impact that these taxes have on the family budget of the actual taxpayer (Gassen, 2013, p. 104). Thus, it is common in countries that favor this tax base the absence of a fiscal citizenship, accompanied by a poor perception of the tax structure, deepening the illusory picture and undermining the achievement of an effective democratic process (Musgrave, 1972, p. 429).

Such perspective, as we have seen earlier, is not new in the literature around fiscal illusion, returning to the already addressed Mill's Hypothesis. Coined in the nineteenth century, but resulting from several other perceptions developed up to that time, this hypothesis already pointed out to what extent direct taxes, due to their characteristic irritating nature, can be considered an important instrument to control public spending, precisely by instilling in the population a questioning spirit regarding the destination of public resources.

Mill's Hypothesis synthesizes in public finances the illusory effect caused by indirect taxation, which, embedded in the prices of goods and services, tends to go unnoticed by the consumer, and has been empirically confirmed, either by social experiments such as those developed by Sausgruber and Tyran (2005), or through opinion polls and interviews to investigate to what extent the population understands the weight of such burden.

Based on such theoretical assumption, Alexandre Manoel Ângelo da Silva and Rozane Bezerra Siqueira (2014) analyzed the expansion of federal public spending in Brazil in the period 1991 to 2011 - which would have increased by 7.5% in relation to GDP, from 14% to 21.5% of domestic product - seeking to demonstrate to what extent the financing of such expenditure by the increase in indirect taxes could be explained by the so-called Mill Hypothesis.

By measuring the visibility of the tax burden in the period, through the ratio of direct taxes to total tax revenue, and comparing it with the demand for public spending, the authors came to the conclusion that an increase in direct taxation - in the case of income tax - would correspond to a consequent decrease in public spending in general.

Such a result is endorsed by the findings of Pedro Henrique Martins Prado and Cleomar Gomes da Silva (2018), who, analyzing budget data, found in Brazil the presence of typical effects of fiscal illusion related to the predominance of the structuring of the tax matrix around indirect incidence.

Thus, as the main source of funds for the public machine, the consumption tax acts in a masked way, hiding the tax burden as a final cost directed to the consumer and, consequently, inducing the taxpayer to the mistake of thinking that he pays nothing, or, at best, not allowing him to dimension the portion of the tax levied on the operation.

## 5.3 THE ILLUSION IN DIRECT TAXATION

One can also observe a preference for the illusory model even when dealing with the direct incidence on income, by abusing tax figures to be collected directly by legal entities. This option, although it facilitates collection, has a harmful effect on the understanding of the real financer of the State, since legal entities, as the fiction that they are, do not suffer the final burden of the tax burden. This can be distributed, as a cost of the enterprise, to consumers and workers, so that the abuse of this source of funding can be, in addition to a fiscal illusion, a decrease in equity (Nogueira, Siqueira & Luna, 2015, p. 14).

The same is observed with the so-called payroll taxation, in which the contribution intended for the employer often translates into reduced wages for employees, or ends up being passed on to the consumer through the price system, depending on the elasticity characteristics of the market (Musgrave & Musgrave, 1980, p. 353). Furthermore, due to the labeling imposed on this tax as being the employer's burden, the image that its economic burden would be borne by the employer and not by the employee's income or by the consumer has spread.

In this scenario, these tax figures are not clear about their final incidence already in their names. A false impression is created that those responsible for the practice of such acts are the subjects in which the tax incidence will be observed. However, as the literature on the subject points out, they are only the ones responsible for collecting such taxes to the public coffers.

As already mentioned, for this phenomenon Sanandaji and Wallace (2010) coined the expression tax obfuscation, a measure that represents the difficulty of the population to understand in the tax incidence its real payer.

The debate around tax illusion, thus, gains a new contour from the observation that the State, by designing the respective tax matrix without clarifying to taxpayers how its incidence would be distributed, would contribute to create a mistaken perception. The government, therefore, would use indirect policies to hide essential information to citizens, manipulating their perception of public affairs. In the face of such a phenomenon, a less complex system would be of no use, but it would still keep taxpayers under such a veil. For Sanandaji and Wallace, the obfuscation would increase the costs necessary to promote a transparent tax policy, since it would not be enough to indicate to the taxpayer the size of the tax burden, as is usually done in policies aimed at enlightening the population. But also specify who would effectively pay for it.

Still regarding direct taxation, we have in the Individual Income Tax certain options that, by reducing the tax base of the progressive rate table, may induce the taxpayer of said tax to not be able to determine the actual tax burden supported by him/her, overestimating such burden. This is because the granting of several tax benefits and the very staggered structure of the Income Tax progressivity make the effective tax rate lower than the legal rate, reinforcing an erroneous perception of the burden effectively collected.

This point is important because, as warned by Amilcare Puviani (1972, p. 200), it tends to create a negative tax illusion in the wealthier sectors of society, exacerbating a tax burden that does not exist and stimulating undue resistance by these segments of society to eventual adjustments in search of greater progressivity. As in the Brazilian case, direct taxation on income has a reduced universe of taxpayers, focused on the top of the social pyramid, it is possible that this negative tax illusion is at the root of many misconceptions usually associated with the perception of this form of taxation.

However, we reinforce, once again, that such a perspective tends to be weighed against the objectives verified before the tax policy outlined for the income tax, which gains a certain constitutional contour of respect for the ideas of contributive capacity and achievement of an existential minimum that must be taken into consideration (Massarrat-Mashhadi, & Sielaff, 2012, p. 19-20). Without going into the possible regressive effects of the tax deductions of this tax - which would further reinforce the illusion attached to it -, we emphasize only the need to put into perspective the message that our tax matrix is transmitting, by making use of tax figures that are inherently anesthetizing for the poorest strata - including the adoption of nominal rates lower than the effective ones - while, on the contrary, exacerbating the irritating nature of taxation borne by the economic elites of the country.

## 5.4 CASCADING TAXATION

Finally, as another typical characteristic of our tax matrix, we have the incidence of various taxes on the calculation basis of other taxes. A structural element of our tax system, the cascading incidence irradiates throughout the normative system as something naturalized and even referenced in several pronouncements of the Federal Supreme Court[22].

22 BRAZIL. Federal Supreme Court (STF). RE 582525. Rapporteur: Joaquim Barbosa. Full Court. Judged on 09/05/2013. Published on: 07/02/2014; RE 559937. Rapporteur: Min. Ellen Gracie. Reporting Judge: Min. Dias Toffoli. Full Court. Ju-

One of the most emblematic examples of such form of overlapping incidence can be extracted from the formula for "calculation on the inside" of the Tax on Circulation of Goods and Services (ICMS), legally provided for in article 13, paragraph 1, I of Complementary Law 87/96. The measure represents a true artifice when it establishes the duty of the taxpayer of law to consider that the tax itself incorporates the respective calculation basis as an integral element of the sale value of the goods or service.

As a result, we have an increase of the effective tax rate, which, in practice, is higher than the one legally provided, contributing severely to a distortion in the understanding of the tax burden on the acquired goods. This is because, in a complex and excluding structure such as our tax matrix, with a technical language that is difficult to understand, few people would be able to understand the reasoning behind the legal provision that allows a nominal rate of 25% to be equivalent, in real terms, to 33.33% of the value of the product consumed, as is the case of ICMS.

In this sense, in addition to the regressivity inherent in consumption taxation, our tax system's recourse to a cumulative structure, interpreted here in the broad sense of taxes being levied upon other taxes, represents a serious obstacle in terms of civilization for the country.

These tax subterfuges severely contribute to the poor formation of a fiscal conscience and aggravate the illusory picture, precisely at the point warned by Puviani (1972, p. 43) regarding the incidence of illusory strategies carried out in the course of the productive chain, which keeps the actual taxpayer away from the perception as to the economic burden borne by him. The little concern of our tax system with the implementation of an ideal of fiscal transparency ends up going against the formation of a truly democratic State under the rule of law, since it is a right of the taxpayer (especially the de facto one) to know and be able to measure exactly how much tax he is paying.

## 6. BRAZILIANS' PERCEPTION OF THE TAX PHENOMENON: EVIDENCE OF THE ILLUSION

In Brazil, researches aimed at sizing the social perception of the tax phenomenon have begun to advance in recent years, although they still represent a field to be explored. Although they do not measure exactly how the social perception of tax incidence occurs, it is already possible to identify in these studies typical results of a society subjected to illusory effects.

As an example of such surveys, an important study was conducted in April 2010 by the Brazilian School of Financial Administration - ESAF (2010). The results were released in June 2010 under the title " Brazilian Fiscal Policy Perception Survey", a survey conducted through interviews that reached 336 municipalities and had a sample of 2,016 individuals, representative of the Brazilian reality at the time. The survey sought to gauge not only the level of knowledge of the Brazilian population about the fiscal policy of our country, but also to capture the perception of individuals about tax collection

dged on 03/20/2013. Published on: 10/17/2013; RE 582461, Reporting Justice: Min. Gilmar Mendes. Full Court Judged on 05/18/2011.Published on: 08/18/2011.

and public spending, the availability of information and effectiveness of the mechanisms of social control of financial activity, as well as to assess public opinion on state actions.

In parallel with the survey developed by ESAF, we have the survey conducted by the State System of Data Analysis Foundation - SEADE (2016), an institute linked to the Secretariat of Planning and Management of the Government of the State of São Paulo, called "Survey on the perception of the population in relation to taxes and public spending - Metropolitan Region of São Paulo". Through this research, SEADE assessed issues such as level of knowledge about existing taxes, transparency of related information, understanding about the burden borne, as well as the evaluation of public spending and the performance of the State in general.

Both surveys, very similar in methodological terms, show the existence of a gap between the information held by the population in general, especially about the distribution of the tax burden borne and the respective cost of the public sector and the existing fiscal reality, signaling the possible submission of our society to the illusory effects of the State's financial activity.

As an example, it was observed in both studies a tendency for the interviewed population to remember direct taxation figures, such as income tax and urban property tax, to the detriment of consumption taxes, such as IPI and ICMS, even though these may be, even if in an anesthetizing perspective, much more present in the daily life of the population in general.

Another finding of the surveys was to observe a variation of responses according to the characteristics of the social strata to which the respondents belong[23]. Thus, the perception of taxation, direct and indirect, not only varies according to the income of individuals (SEADE 2016, p. 3-5), but also the self-perception of individuals as responsible for paying taxes also varied according to people's occupation (ESAF, 2010, 27).

It is also important to mention the survey conducted by the National Chamber of Store Managers, 74% of Brazilian consumers do not seek to know the tax burden levied on products and services consumed by them[24]. That is, even if such information is present in the invoices, as determined by Law 12.741/2012, only 1/4 of the consumers interviewed had the habit of checking the tax burden to which they were subjected, demonstrating the low efficiency of the measure in terms of tax transparency.

However, even if all consumers were aware of the importance of such information, the survey

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23 The results confirm the findings of Blaufus et al.: "The most significant factors leading to a deviation of the perceived tax burden from the actual tax burden were the taxpayers' education and whether they included social security contributions in their estimations. The higher the education, the higher the probability that the actual tax burden was accurately estimated. Thus, our results hint at asubstantial degree of fiscal illusion (Puviani 1960) at least for less educated taxpayers. In addition, subjects who did not distinguish between taxes and social security contributions were more likely to overestimate the tax burden than those who did.
It is also in line with what Vanessa Williamson (2017, p. 49-51) obtained when analyzing the position of US citizens about their self-perception as taxpayers. According to the author, the figure of taxpayer is usually associated with individuals who are employed, with a fixed source of income, or who own real estate, reflecting how such understanding also involves the recognition of a social status

24 Survey available at < https://www.spcbrasil.org.br/pesquisas/pesquisa/6343> accessed 12.Jun.2021. According to the survey, 800 consumers and 818 entrepreneurs were heard with a margin of error of 4.00 percentage points for a 95% margin.

also indicated that only 22% of micro and small entrepreneurs would know how to measure the tax burden on their business operations. Among other reasons, this explains the fact that the invoices inform only an estimate of the tax burden on the consumption of each good or commodity. The complexity of our tax system makes it impossible not only to measure the tax burden on consumption, but also makes it difficult for both the taxpayer in fact and the taxpayer in law to measure this burden.

This result confirms part of the research conducted in 2003 by Denize Grybovski and Tatiana Gaertner Hahn (2006), who, investigating the degree of social awareness about the importance of paying taxes, analyzed the perception of managers of micro and small sized companies about the importance of the spontaneous fulfillment of their principal and accessory obligations. According to the researchers, in addition to not being able to measure the tax burden to which their businesses were subjected, entrepreneurs also had difficulty in determining the destination of such public revenue.

As a result, Grybovski and Hahn came to the conclusion that the group surveyed had a low level of understanding of the functions to be performed by the State, as well as of the role to be played by taxation in this context, and advocated an improvement in fiscal education tools to combat this misperception.

Although it is not possible to extrapolate the results of such research to more general conclusions, both studies point to the poor transparency of the Brazilian tax structure as one of the main causes for the conclusions obtained.

These results are in line with the specialized literature on tax illusion, and it is possible to infer a connection between the normative design of the Brazilian tax matrix, full of figures that enhance the illusory phenomenon, and the distortion occurring in the perception of the citizen taxpayer regarding the cost of the State. Although these findings reflect a larger picture in which Brazilians in general have difficulty understanding the reality in which they are inserted, it is impossible to rule out the role that tax opacity plays in these results.

The dissociation between the fiscal reality of the country and the social perception about taxation seems to be, therefore, a fact that imposes itself to anyone who seeks to understand and study the tax phenomenon. The effects caused by the tax illusion pervade the entire society and tend to explain the maintenance of the precarious social contract existing in our country, in which it is verified not only a highly regressive tax matrix, but also with a supply of public services that falls short of what is expected to solve the existing social inequality and fulfill the other constitutional objects that are expected of the Brazilian State (Nogueira, Siqueira & Luna, 2015).

However, as a parallel objective to the study proposed here, it is necessary to go a step further, even if only by way of addressing a research agenda for future proofs. Considering the social data presented and based on the assumption that fiscal illusion is something present in the Brazilian experience - which can even be measured by an index, as observed in Mourão (2008) and Dell'Anno and Mourão (2012) - we should ask ourselves whether it is possible to assess to what extent the perceptual distortion is distributed among the different strata of our society.

Such an inquiry is relevant since, as observed above, we are a society marked by deep social inequality, imposing diverse realities to different strata of our population pyramid. The level of social inequality is so great that it is possible to affirm that there are several "Brasis" within our country, bringing the lived reality closer to the monopolistic model idealized by Puviani for the development of the theory of fiscal illusion.

Besides such heterogeneity, it is also possible to observe that the Brazilian tax matrix acts differently depending on the social position occupied by the individual.

In this sense, we have seen that the structure of the tax matrix, in addition to being regressive, varies in terms of the distribution of indirect and direct taxes, in such a way that the poorer portions of the population tend to contribute proportionally more from consumption taxes, typically complex and anesthetizing. On the other hand, the wealthier portions of the population tend to be subjected to more incisive direct taxation, demonstrating the formation of a possible misconception in the social imaginary about the groups responsible for contributing to the country.

Such characteristics give us indications that the illusory effects of our tax matrix, as well as the respective economic burden, would be distributed differently, causing a more severe fiscal anesthesia in the poorer portions of the population, who besides not having an exact understanding of how much they collect in taxes, may have fewer indications to understand the regressivity inherent in the financial activity of the Brazilian State.

It is to this phenomenon that we will dedicate ourselves in the following pages, defending the need to investigate the existence of something close to a cognitive regressivity in our country's tax matrix.

## 7. COGNITIVE REGRESSION

The way in which individuals perceive the tax burden tends to depend on a series of factors that go from the contexts in which the people subjected to the tax burden are inserted, to the way in which these taxes are designed to distribute the perception of their incidence.

For the same objective burden of the tax in relation to the public revenue collected by the State, the perception of each one, and the consequent acceptance - with some resistance - will depend not only on the cognitive capacity of each individual, but also on the greater or lesser degree of transparency of the tax incidence (Sausgruber & Tyran, 2005). Thus, for a given objective burden of the tax burden, taxes that "make one feel a lot" would impose a greater subjective burden, that is, a greater degree of suffering and, consequently, perception of the tax burden. On the other hand, taxes that "feel little" would act in the opposite way, reducing the subjective burden on the individual. The taxpayer would thus collect without further resistance (Dalton, 1972, p. 65).

This perspective, as we have seen, was already present in Puviani (1972, p. 191-213) who, when discussing the different psychological effects of fiscal illusion, did so against the backdrop of a sociological theory that took into consideration the different social characteristics of the groups that make up our society and how the various types of fiscal illusion are distributed and operate among such individuals. In other words, in a way, it is possible to identify as one of the cores of analysis of the original meaning of Puviani's Theory of Fiscal Illusion precisely the understanding that the illusory strategies may play different effects depending on the social stratum to which the individual in question belongs and on the configuration of the set of taxes to which he or she is subjected.

Puviani, however, seems not to dwell on the cognitive capacity of individuals, not checking to what extent certain individuals would be psychologically more susceptible to the illusory structures contained in financial action. The study of such cognitive constraints came to gain impetus only in the twentieth century, with the advances related to the study of the behavior of individuals from a perspective of bounded rationality (Simon, 1990; Kahneman & Tversky, 2012).

This is because the classical choice theory understands that agents, when subjected to situations in which they must make decisions, tend to seek choices that maximize their positions, in what is conventionally called a rational choice. This perspective is based on the premise that agents would have unlimited capacity to process all the information involved in decision making, which is not feasible given the existence of several limitations that would prevent the realization of the best choice (Simon, 2000, p. 5).

Such restrictions, both cognitive and environmental, would end up biasing the decisions made based on the context in which they were inserted and the way in which the issues and information related to them were presented. In this sense, Simon argues that "human rational behavior is shaped like a pair of scissors, whose blades are the structures of the environment and the cognitive capacity of the individual" (Simon, 1990, p. 7).

For him, the information processing system would not necessarily seek to optimize the choice, but rather to satisfy the agent through the first decision that would be acceptable to him as a solution to the problem. Thus, in a first moment, bounded rationality would be linked to the study of decision making by the agents involved from the existing uncertainties, under these two dimensions.

However, part of the studies on the limitation of rationality have conferred to the biases arising from the processes of choice a character of problems to be identified and circumvented by means of the law[25], precisely because they lead agents to judgment errors. For such authors, this understanding would start from the fact that agents would not be in possession, or even using, all the existing information when making a decision, and the legal system should guide individuals to a decision closer

25 "Boundedly rational behavior thus might be taken to justify a strategy of insulation, attempting to protect legal outcomes from falling victim to bounded rationality. To date, most treatments of bounded rationality in law have been of this character. Strategies for insulation can be characterized as a method for 'debiasing law.' A quite different possibility - one that has received much less attention in law and elsewhere - is that legal policy may respond best to problems of bounded rationality not by insulating legal outcomes from its effects, but instead by operating directly on the boundedly rational behavior and attempting to help people either to reduce or to eliminate it. We describe legal policy in this category as "debiasing through law." Debiasing through law will often be a less intrusive, more direct, and more democratic response to the problem of bounded rationality." (SUNSTEIN & JOLLS. 2004..p. 1-2)

to rationality, which, as we have seen, is the very antithesis to a tax matrix that is guided by means of illusory structures.

Thus, there would be a double factor that would interfere in the degree of tax awareness, since the level of tax perception would reflect the combination of both the normative design, which could impose a somehow anesthetizing structure, and the individual cognitive capacity, which would allow a greater or lesser possibility of understanding how taxation operates.

Starting from this premise, it would be possible to infer that, like the economic burden, the cognitive cost for understanding the tax matrix could also be distributed differently in each society, imposing a greater degree of opacity for certain portions of the population. And, depending on the cognitive capacity of everyone, in parallel with the ability to pay, the imposition of such a burden could also be somewhat regressive.

To this end, it is necessary to investigate to what extent each portion of the population is subject to somewhat illusory figures, as well as whether there would be a coincidence between such degrees of tax anesthesia and the respective reduction of the capacity to understand the tax phenomenon. Thus, in the following topic we will address the first order of concern, that is, we will evaluate to what extent illusory structures are distributed in the different strata of our society, seeking to demonstrate how certain social groups are subject to a higher cognitive cost for the perception of the tax system.

After such analysis, we will focus on the second point, namely, to what extent the distribution of the cognitive burden imposed by the tax opacity takes place according to everyone's ability to understand. This is because, when structured under such an illusory perspective, the cognitive cost necessary for us to position ourselves critically around the tax phenomenon would end up being more burdensome for the portions of the population that are already cognitively exhausted.

Thus, we argue that it is possible to observe an asymmetric level of fiscal illusion in our society, considering that it would be accumulated in the poorest layers of the population precisely the two limiting factors of rationality of individuals - informational restriction and limitation of cognitive capacity - subjecting them to a greater predisposition to form inconstant preferences in tax matters.

It is not intended at this point to advance towards empirical proof of this regressive distribution as to the cognitive burden of understanding the tax matrix. Although the evidence points considerably in this direction, including the aforementioned surveys, which indirectly bring the perception of this phenomenon to our reality, it is true that practical confirmation of the existence of cognitive regressivity - and its effects on the perception of the most vulnerable populations regarding the cost of the State - would require empirical experiments and opinion polls directed to this end.

Still, such a statement does not invalidate the premises developed here, nor does it reduce the use of the term cognitive regressivity to the metaphorical field, as if the use of the term were a simple allegory without any connection to a social context or to the illusory structures that exist here.

The data and conjectures presented above give us hints that cognitive regressivity does exist and possibly produces concrete effects that deserve further attention and investigation. Thus, the following pages address this order of concerns, positioned between empirics and metaphor, with one foot in our reality - by denouncing the regressive effects of fiscal illusion - while at the same time demanding specific proof.

## 7.1. THE DISTRIBUTION OF THE COGNITIVE COST OF THE TAX ILLUSION

As we have seen, the structure of Brazilian taxation is the result of choices made in the field of financing and public spending - we call this set of choices the tax matrix. These historical choices, in turn, resulted in a tax matrix that is based on the taxation of consumption as the main source of revenue, leaving the other economic bases of taxation - income and assets - with a secondary role.

The measure has as a result a high cost in terms of citizenship, not only fiscal, but in a more comprehensive perspective. This is because we have adopted an anesthetizing model, in which the tax burden, as a rule, ends up being transferred through the pricing system to the final consumer. The latter, in turn, when acquiring goods and services, tends to bear the tax burden unnoticed, without any knowledge about the tax dimension that makes up the amount paid.

The indirect tax incidence, as we have seen in this essay, is linked to illusory effects, making it difficult not only to measure how much is paid, but even making it impossible for society to have an exact understanding of the size of the public sector and the distribution of its weight among the social strata. Its opaque structure tends to collaborate with what Sainz de Bujanda (1975, p.119-120) classifies as a general state of anesthesia, in which subjects collect their taxes unconsciously, under the effects of deceit and illusion.

For no other reason, the opinion polls listed above have identified the difficulty of the population - especially the poorest - to apprehend the incidence of this form of taxation, demonstrating a reduced understanding of individuals regarding consumption taxation, especially when compared to the economic bases taken as direct.

Direct taxation - income and assets -, on the other hand, is felt only by those who present such signs of wealth, producing the false belief that they are the ones responsible for supporting the Brazilian treasury.

These taxes, in fact, allow a better appreciation by their taxpayers about the amount of resources allocated for the fulfillment of the tax obligation, which is why Puviani (1972, p. 198-199) already warned that the wealthier strata do not usually submit to the so-called illusion about the amount of wealth withheld.

The picture of misperceptions, as we have seen, is accentuated when the nominal rate of direct taxes is numerically higher than the effective rate - as in the case of Individual Income Tax, mentioned above. From this angle, taxpayers tend to be subjected to a kind of negative tax illusion, which enhances the perception of how much has been collected, causing such individuals to have a mistaken understanding of their contribution to the collectivity.

Thus, considering the social inequality existing in Brazil, we have that the portion of society that holds income and assets liable to be subjected to direct taxation tends to be concentrated, primarily, in the country's economic elites, who are not only aware of how much they pay, but, in certain contexts, may have this perception erroneously aggravated.

As an example, in 2003, only 32.6% of Brazilian households reported paying IPTU (Property Tax), with this stratum concentrated in the upper part of the social pyramid (IPEA, 2011b. p. 10). Regarding the Income Tax of Individuals, for the fiscal year 2018 we had around 30 million declarations sent to the IRS, and of these, only 19.350 million showed any tax due[26].

Even the 2017-2018 Household Budget Survey (IBGE, 2019) gives evidence of the different weight of direct taxation in the current expenses of Brazilian families. When analyzing the type of expenses, the survey pointed out that while families with incomes above R$ 23,850.00, the richest portion of the sample, devoted around 20.7% of their budget to the so-called "other current expenses," the poorest families set aside only 4%.

Although it does not include only expenses with direct taxes, this data, if read together with the information presented in item 2 of this paper regarding the estimated distribution of the tax burden among the different social strata, shows us how direct taxation, as a rule in Brazil, falls proportionally more on the richest layers of the population (Carvalho Junior, 2021). While the poorer segments are subject to a greater degree of so-called indirect taxation, which is precisely the one considered by the literature as the greatest source of tax illusions (Williamson, 2017, p. 48).

Such distortion can be magnified if we take into consideration that the transfer of the tax burden leads to the erroneous feeling that the taxpayer in law is responsible for the disbursement of the wealth itself. A less attentive look at the population ends up ignoring the existence of the economic repercussion of taxation on consumption to create an imaginary that businessmen and traders are the ones responsible for bearing the economic burden of the Tax on the Circulation of Goods or the Tax on Industrialized Products, when in fact the burden is passed on through the price system to the end consumer.

The same understanding is made with respect to payroll taxes, which, as we saw earlier, since part of their payment is classified as an employer's responsibility, employees are unaware of the fact that such incidence has repercussions on their wages. These taxes, as well as consumption taxes, tend to reinforce a mistaken perception about who is contributing to the State, increasing the subjective tax burden of the richest, while reducing the sense of contribution owed by the poorest strata.

This perspective is already present in Amilcare Puviani (1972, p. 202-203), when he analyzes the distribution of the effects of tax illusion among social strata. For the Italian author, the misper-

26 Data obtained in BRAZIL. (2020). Available at: https://receita.economia.gov.br/dados/receitadata/estudos-e-tributarios-e-aduaneiros/estudos-e-estatisticas/11-08-2014-grandes-numeros-dirpf/grandes-numeros-irpf-2018-2019-completo-1.pdf > accessed on: 15/08/2021.

ception of indirect taxation would be further enhanced by the fact that direct taxes tend to occur more frequently in the wealthier strata of society, creating the false perception that they are the ones responsible for bearing the tax burden. Even Aliomar Baleeiro (2015, p. 240), an important Brazilian financier, shared this understanding about the distinct distribution of the tax perception of society through direct and indirect taxes.

Thus, it is possible to see a certain coincidence between a progressive tax model and the adoption of taxes considered irritating. At the same time, there is a deep connection between regressive taxes and the anesthetizing effects of such forms of incidence. Fiscal illusion is in tune with a regressive perspective of the tax matrix, producing a perceptive distortion with more intensity among the most vulnerable strata of the population, precisely because they are the ones who most bear the burden of indirect taxation. In this way, the design of the tax matrix is not only intrinsically related to the degree of tax anesthesia or tax awareness observed, but also, in parallel, to the degree of regressivity or progressiveness.

In this scenario in which tax regressivity and tax illusion go hand in hand, the poorer segments of the population, by being proportionally subjected to a greater burden of indirect taxes, tend to suffer more severely the effects of tax illusion, damaging their perception of how the economic burden is distributed in society.

In the words of Puviani (1972, p. 203), the error and the lie intersect in the subjective burden of the rich, but for their own benefit, since they induce them to believe that they collect proportionally more, reinforcing a negative perception, and consequent resistance, in relation to the financial activity of the State. On the other hand, the misunderstanding arising from the illusory incidence on the poor occurs to their detriment, since the tax illusion is not only at the root of the perpetuation of both a regressive tax matrix, but also the reinforcement and proliferation of stereotyped views by a public opinion contrary to the promotion of greater distributive justice.

## 7.2. CAPTURING PROCESSING CAPACITY: THE COGNITIVE EFFECTS OF POVERTY

Once the first premise is established, we must investigate the second, which is, whether social groups subjected to an illusory structure have at their disposal the same cognitive capacity to overcome the illusory framework and understand how tax incidence occurs. And we already point out that the answer to this question is negative.

Recent studies in the field of behavioral economics and the psychology of scarcity have shown that individuals subjected to deprivation have a lower capacity to process information and make decisions than individuals in a situation of abundance.

Consolidating several studies on the subject, Mullainathan and Shafir (2016, p. 25) point out that the human mind starts to work differently when it is in a situation of restriction, so that it would be possible to argue that in scarcity, besides a physical limitation, there is another form of mentality of its own.

For the authors, the scarcity situation changes the way people reason, "capturing their minds" in such a way that individuals begin to channel an important part of their focus on solving the problem related to the situation of deprivation. With this, the human mind tends to process cognitive challenges in a way different from normal situations, since the agent's attention is focused on a specific situation, leaving little processing capacity other than for the solution of his immediate problem[27].

To better understand the limitation of our mind in terms of processing problems in a scenario of scarcity, Mullainathan and Shafir state that we enjoy a kind of "cognitive bandwidth". For the authors, this analogy would reflect the computational capacity of each individual to make reflective judgments about situations posed[28], bringing together not only the cognitive capacity of individuals, that is, "the psychological mechanisms underlying our ability to solve problems, store information, reason logically, and so on," but also the psychological characteristics tied to executive control, that is, the "ability to manage our cognitive activities, including planning, attention, initiating and inhibiting actions, and controlling impulses" (Mullainathan & Shafir, 2016, p. 72-73).

The human mind, in an analogy made by the authors, would be like a computer. It tends to become slower as the number of activities developed in the same amount of time increases. The slowness of the machine's processing would not be caused by problems inherent to it, but rather due to the limitation of the processing capacity that, directed to one objective, cannot be used for others.

Thus, as the name suggests, the idea that subjects have a bandwidth to process information leads us to the conclusion that the cognitive resources available to each of us must be seen as something finite. Whether it is the cognitive effort required for decision making, or even activities that require the individual's attention and self-control, such use consumes the mental energy reserve we have, damaging our willingness to perform other tasks that involve voluntary effort (Kahneman, 2012, p. 54-55). Thus, by relying on the reflective system to face complex problems, individuals tend to exhaust their processing capacity.

It is in this light that Mullainathan and Shafir (2016, p. 66) argue that the framework of deprivation "taxes" our cognitive bandwidth. This is because, by capturing our mind with a pressing problem, scarcity not only draws our focus, preventing us from dwelling on other considerations.

Situations of restriction effectively occupy our minds, leaving no room for us to process any other information. It is not that scarcity diminishes the individual's innate mental capacity, it just

27 "The dividend of focus, the higher productivity of the end of a deadline, or the precision advantage of the blueberry poor, comes from our primary mechanism: scarcity captures the mind. Here the word capture is essential: it happens inevitably and is beyond our control. Scarcity allows us to do something that we could not do on our own as easily." (Mullainathan & Shafir, 2016, p. 43)

28 "The concept less mind is well studied by psychologists. Although careful research in psychology employs several clear distinctions to capture this idea, we will use the general term bandwidth to cover them all. Bandwidth measures our computational capacity, or our ability to pay attention, to make good decisions, stick to our plans, and resist temptation. Bandwidth is related to everything from intelligence and test-taking performance to impulse control and success in dieting." (Mullainathan & Shafir, 2016, p. 62).

occupies a portion of our mind not allowing it to be used for other tasks (Mullainathan & Shafir, 2016, p. 72).

This framework allows us to take a new look at the scenario of scarcity caused by poverty and the policies necessary to overcome it. This is because, instead of imputing the productive deficit of the poor as being the result of a supposed lack of capacity inherent in these subjects, we can advance in the analysis of the problem and verify that economic scarcity itself is responsible for this cognitive overload. That is, poverty can be the cause of poverty[29].

This observation is relevant for us to understand the problem at hand. Initially, because it breaks with the idea of meritocracy, in which the state of poverty would reflect exclusively the lack of competence of individuals in that situation. It starts to credit responsibility to scarcity itself, since this creates a cognitive scenario that shapes the behavior of the subjects and makes it difficult to formulate choices aimed at overcoming the situation of deprivation. In the words of Mullainathan and Shafir (2016, p. 216), the "data suggest that the causality goes, at least equally strongly, in the other direction: that poverty, the scarcity mindset, causes failure."

Two, because within the psychology of scarcity itself, poverty has unique characteristics that set it apart from other forms of deprivation, such as lack of time or observance of a diet. Poor people are not in this situation by choice. Poverty is not a form of scarcity subject to individual discretion. Economic scarcity is a reality that is imposed on the subject and in which there is no escape valve or possibility of change. As Mullainathan and Shafir (2016, p. 207-208) warn, one does not take a break from poverty.

Third, because scarcity can manifest itself in many forms. The lack of resources caused by poverty, even if it represents a monetary scarcity, tends to spread to the most diverse aspects of human life, potentiating the effects of the state of deprivation.

Thus, it is common in low-income individuals to see a lack of time and disposition - since the person will have to work more and will consequently be more exhausted -, the lack of a quality diet - which will harm their health and productivity -, and even a reduction in leisure time and possibilities.

Finally, the very choices made in a situation of scarcity caused by poverty tend to be more difficult and require greater energy and processing capacity from the individual. This is because, given the framework of deprivation and limited resources, the poor person has no room to make mistakes, because once the scarce resource has been used recklessly, there is no room to accommodate new uses. Mistaken decisions in poverty settings are more damaging than those observed in abundance situa-

29 "There are other minutiae that we could discuss. But the bottom line is clear. Poverty itself taxes the mind. Even without a researcher around to remind us of the scarcity, poverty reduces fluid intelligence and executive control. Back where we started, this suggests a major turning point in the debate about the cognitive capacity of the poor. We would argue that the poor do have a lower productive capacity than the affluent. This is not because they are less capable, but because part of their minds are captured by scarcity." (Mullainathan & Shafir, 2016, p. 90)

tions (Zamir & Teichman, 2018. p. 484).

And, by potentiating the effects of scarcity, poverty tends to "tax" people's bandwidth in a different way, deeper than other forms of deprivation, reducing the cognitive capacity and executive control of individuals who, thus, become more susceptible to biased choices. This effect is often referred to as poverty-caused cognitive taxation, which, while not to be confused with taxation per se, seeks to accurately represent the cognitive costs involved in the scarcity framework (Mani et al 2013; Haushofer & Fehr, 2014).

It is important to point out, therefore, that the poor not only have scarce financial resources, but also manifest less cognitive bandwidth, since a considerable part of it is occupied by the mentality of scarcity.

This analysis cannot be confused with any form of discrimination, such as saying that the poor individual himself would have some cognitive deficit in relation to people who enjoy a situation of abundance. Quite the contrary. What such research points out is that any individual facing a state of exhaustion typical of the scarcity situation caused by poverty tends to be trapped by its cognitive effects[30]. Individuals in a situation of scarcity are not in the same condition as other members of society, precisely because poverty imposes on them a barrier to be overcome, also of a cognitive order.

This reality ends up being a trap for individuals who find themselves in this situation, since scarcity taxes the bandwidth, reducing the individual's capacity and hindering the efficient use of their resources to overcome the situation of deprivation. Poverty modifies the agents' behavior, leading them to act in a way that is inconsistent with the purpose of getting out of scarcity, in a true vicious circle that is difficult to break. The trap, therefore, is reflected not in the lack of resources per se, but rather in how the few resources available are misused by individuals through behaviors that broaden and deepen the initial restrictive framework (Mullainathan & Shafir, 2016, p. 177).

Thus, reduced cognitive abilities, as a direct result of poverty, tend to influence individuals' perception of the world and subject them more often to cognitive biases and, consequently, to wrong choices and misunderstandings. Low-income people suffer a limitation, not only of economic order, but also of cognitive nature (Mullainathan & Shafir, 2016, p. 227). This limitation, as stated above, does not necessarily have to do with the characteristics of individuals, but is related to the very context of lack of resources in which they are inserted.

## 7.3. WHEN SOCIAL INEQUALITY MEETS FISCAL ILLUSION

We must now carry these conclusions to the proposed debate, analyzing the effects generated by fiscal illusion in the poorest parts of the population.

30 "In asking whether poverty reinforces itself through psychological channels, we are not suggesting that the poor bear blame for their poverty. Rather, an environment of poverty into which one happens to have been born can trigger processes that reinforce poverty. On this view, any one of us might be poor if it were not for certain environmental coincidences." (Haushofer & Fehr, 2014. p. 862).

As pointed out in the course of this work, the effects of fiscal illusion tend to affect people's perception of the costs incurred due to the State's financial activity, reducing resistance that may be opposed to tax collection. On the other hand, fiscal illusion can also act in another perspective. This is because, by interfering in the perception of how much the family budget is burdened by the tax burden, fiscal illusion tends to distort the self-perception of each one of us as taxpayers and members of that political community. And, as it impacts differently the various social groups, the tax illusion can create the false sensation that certain groups of individuals do not contribute to society, not fitting into the idea of taxpayer.

The importance of the analysis proposed here is present because, if the tax matrix is a reflection of the choices made by a given society about how the tax phenomenon will occur, the possible deviation of these choices caused by a misperception of reality - especially in the poorest segments of the population - may distance the financial activity from the constitutional objectives. The very legitimacy of the policies necessary to overcome the systemic inequalities can be put in check by the simple fact that society, and especially the poorest segments of the population, do not have an accurate understanding of the disparity that structures the choices made in the field of tax matrix (IPEA, 2010, p. 93).

Besides being marked by high social inequality and extensive poverty of its population, Brazil has a regressive tax system, since it is sustained by the taxation of consumption. Such model, anesthetizing by nature, tends to impact more sharply precisely on the poorest portions of the population, leaving little direct taxation - income and assets - in charge of the richest strata of society (Puviani, 1972, p. 202; Williamson, 2017, p. 52).

The scenario, therefore, leads us to the conclusion that the Brazilian tax system imposes a higher cognitive cost of understanding for the less favored portions of our people, causing a distortion about how the distribution of the tax burden is "felt" and creating a false perception that such population strata do not contribute to the rest of society[31].

As noted in the previous topic, these vulnerable population groups tend to be more susceptible to biases and misunderstandings, so that a tax matrix that reinforces a framework of deception tends to have its effects enhanced before the already captured mentality of these people. Demanding a value judgment on how the tax incidence to which they are subjected is a complex task, since the tax illusion on them makes the subtle perception of the tax burden supported, or even the cost of the State, even more difficult to realize.

31 An example of this mistaken way of thinking can be extracted, within the American reality, from a common argument elaborated by the Republican Party and that gained repercussions in the 2012 presidential campaign, when the then candidate Mitt Romney stated that "There are 47 percent of the people who will vote for the president no matter what .... There are 47 percent who are with him, who are dependent upon government, who believe that they are victims, who believe that government has a responsibility to care for them, who believe that they are entitled to health care, to food, to housing, to you name it.... These are people who pay no income tax. Forty-seven percent of Americans pay no income tax." (ZELENAK, 2014. p 471).

When provoked to speak about how tax incidence is distributed, such subjects end up relying on intuitive perception to form their value judgments, creating an understanding that tends to be based more often on heuristics (Silva et al. 2018, p. 306), such as from previous experiences of how everyone undergoes taxation (Buchanan & Wagner, 2000, p. 133). In other words, the judgments of such portions of the population are in themselves already more susceptible to flaws.

However, due to the existing tax illusion, the subjective perception will not always be based on structures that facilitate the approximation of the subject to the reality experienced. This is because, to make a judgment consistent with the real distribution of tax incidence, low-income individuals still face the cognitive obstacle inherent in the normative design of our tax matrix, which, when structuring their choices, adopts a series of instruments that mask the regressive incidence of the tax burden, making it even more difficult to understand how the tax burden is distributed in our society (Williamson, 2017, p. 14; De la Feria, Walpole, 2020, p. 663). In other words, if the judgments of such portions of the population are in themselves already more susceptible to flaws, the tax matrix does nothing to help clarify, only reinforcing the possibility of misunderstandings through the recurrent use of the tax illusion on the poorest population.

Such people, therefore, due to their poverty condition, are more vulnerable to tax illusion and misunderstanding of how our tax matrix operates. Understanding taxation becomes a doubly difficult task, because in addition to overcoming the illusory effect of tax opacity, the mental capture caused by poverty is a separate obstacle for these people to recognize themselves as taxpayers.

That is, by making use of the tax illusion, our tax system possibly increases the cognitive burden for the perception of tax incidence precisely for the sections of the population that already have reduced cognitive capacity for such understanding, subject to an environment that captures their attention and denies them the opportunity to form rational judgments. Although tax illusion is a phenomenon that permeates our entire tax matrix and reaches all segments of society, its effects may be more severely felt precisely in the most vulnerable segments of our population. The perception of the tax burden ceases to be visible, or even intuitive for this social group, which consequently ceases to see themselves as taxpayers of the state, with all the consequences inherent to this self-perception (Williamson, 2018, p. 404).

It is necessary to understand, therefore, how exclusionary the anesthetizing process of our tax model can be, since these individuals already have a biased perception of society, seeing themselves as second-class subjects. The vision that this social group has of reality already passes through the restrictions inherent to the filter of scarcity. The anesthesia caused by the fiscal illusion would only potentiate the picture, collaborating to a distorted vision about how the financing of the rights system and public policies takes place (Fredman, 2019, p. 86-87).

This concern can already be perceived in Puviani (1972, p. 204), when this author discusses the effects of the fiscal illusion among different layers of society. Although he does not focus on the effects of cognitive scarcity typical of poverty, the Italian financier a century ago already denounced how the tax illusion embodies an "almost diabolical" construction that would materialize its own spoliation imperceptible to the poorest, while enhancing the perception of the subjective burden of the richest, it would block any measure aimed at promoting redistributive justice.

And, although she does not address the issue of tax illusion, when analyzing the US social context, Vanessa Williamson (2017, 49) corroborates such understanding by demonstrating how a misperception about the distribution of financial activity spreads within society and contributes to the propagation of mistaken and stereotypical views about those responsible for paying taxes.

This is because the abstract figures of taxpayer and citizen are usually associated with people with income or property, attracting to this perception the idea that only those individuals who bear direct taxes on income and property contribute to the public treasury. Such a widespread conception, which reaches all that country's society, obscures the role of the most vulnerable in terms of collecting their contribution to the community. Rich and poor alike tend to exclude indirect taxation from the perception of the burden borne, which leads to the exclusion of the poorest layers of society from the list of taxpayers.

According to Williamsom (2017, p. 52), this misunderstanding would stem precisely from the anesthetizing nature of certain taxes, which do not usually figure in the popular imagination as burdens borne by all, affecting the taxpayer status of those proportionally more burdened groups, the individuals in poverty.

Even if the historical construction of the United States differs from ours in several aspects, it is important to keep in mind the results of studies such as those conducted by Williamson, not least because the high social inequality that has been observed in that country has brought the experience of heterogeneity lived there closer, in a way, to the reality experienced in Brazil. The oppositions between rich and poor and public opinion about how society and the State should address the issue through taxation bring certain proximities with the scenario observed here, increasing not only the chances that the findings of that research can be replicated here, but also strengthening the evidence that cognitive regressivity occurs in our country.

The asymmetry regarding the incidence of illusory structures can also be indirectly measured through the characteristics of such social groups, such as the level of education, professional occupation, or even gender of the respondents. As for the educational level, Kay Blaufus and others (2015) conclude that the more educated the social strata, the less susceptible the individual is to the effects of an illusory tax matrix. A similar result, regarding the reflection of educational level, can be reached in the analysis conducted by Massarrat-Mashhadi and Sielaff (2020).

Considering the Brazilian social reality, in which the poorest historically have lower education standards - a situation that has deepened in the current pandemic context (Neri, Osório, 2020) - it is possible that any assessment of the degrees of fiscal illusion will find an exacerbation of its effects among these segments of the population.

Even Dell'Anno and Mourão (2012, p.288), in creating an index for measuring fiscal illusion, point out that the effects are not similar around the globe, so that if there is a difference between countries, based on the characteristics of each society, this understanding could be extended to defend the possibility that, within a country, groups that enjoy diametrically opposed standards of living will suffer different illusory effects.

It is for these reasons that we believe it is possible that our tax matrix operates from this double regressive perspective, both economic and cognitive, since in addition to collecting taxes without regard to individual contributive capacity, it would also make use of an anesthetizing taxation to impose a greater cognitive burden on those who are less able to understand their role as taxpayers.

Cognitive regressivity, therefore, represents the union of the informational asymmetry caused by the tax illusion, which operates differently depending on the income stratum, with a higher incidence of cognitive biases observed in the most vulnerable groups, precisely because of living within a framework of scarcity. Thus, it reflects the idea of adopting a proportionally more anesthetizing taxation on those who are less able to grasp the tax phenomenon, increasing not only the burden of understanding how the tax phenomenon occurs in the country, but mainly interfering with the self-recognition of these people as taxpayers.

People who already have their field of vision reduced by the tunnel of scarcity are taxed in an invisible way, so that for these portions of the population to overcome this veil and understand themselves as taxpayers demanding from the State[32], it would be necessary for them to have a "bandwidth" that they do not have.

For these portions of the population, fiscal transparency is not enough. As in the definition of other social policies, which should take into account the cognitive taxation of poverty (Banerjee & Duflo, 2019 p. 333), designing transparency policies aimed at the understanding of this part of the population about how the tax burden is distributed requires a greater effort, precisely so that we can understand the reality in which they are inserted.

32 "Unfortunately, the excessive burden of indirect taxes in the country, besides being regressive and harmful to income distribution, brings yet another order of problems to social policies, in the field of social control and legitimacy. The lack of transparency in the collection of indirect taxes, embedded and disguised in the final price of goods and services, means that lower income citizens are not fully aware of their role as taxpayers and funders of public policies in general - which often prevents them from exercising their citizenship more actively, to defend their rights, to be represented in councils and public conferences and to monitor with the government the formulation and implementation of policies and programs carried out on behalf of the poorest citizens". (IPEA, 2010. p. 93).
In a similar vein, and reinforcing the stereotype of welfare programs, it is important to bring the contribution of Marco Natalino who, in addressing the social perception of the Bolsa Família Program, highlights that "the population rarely connects the Bolsa Família Program to the idea of guaranteeing rights. In this particular sense, the term right was only uttered nominally by a middle-class interviewee, and with a negative connotation. At no time was this or any other term used to report or even assume an experience of contact between the citizen and the State in which the former places himself as the subject of rights claimable before the latter." (Natalino, 2020. p 54).

## 8. CONCLUSIONS

As presented, the Brazilian tax matrix would regressively distribute the cognitive burden for the perception of tax incidence, proportionally overtaxing more the poorer portions of the population who, because they are in a situation of scarcity, already have reduced cognitive capacity to understand how the tax structure works in our country.

From the contributions of the theoretical current initiated by Amilcare Puviani and developed by several other authors, it is possible to identify an effort to investigate the causes and effects of fiscal illusion in democratic processes around the world. Brazil, as can be observed, is no exception to this rule.

We have a highly complex tax system, composed of many different tax figures, marked by an extensive cascading of taxes, as well as extensive use of indirect taxation. All these elements are indicated by the specialized literature as tending to increase the cognitive cost of understanding, as well as distort the perception of the taxpayer-elect about the financing of social benefits.

This cognitive cost, in turn, tends to be regressive, as it has a more serious impact on lower-income individuals, since they would have their processing capacity captured by being in a scenario of scarcity.

Thus, the structuring of our matrix through exacerbated recourse to fiscal illusion, coupled with the extensive social inequality existing in Brazil - with large portions of the population subjected to a lack of resources - allows the characterization of our tax model as regressive, not only from an economic perspective, but also under a cognitive bias.

Therefore, this paper raises an important issue concerning the study of tax illusion and tax transparency in highly unequal societies, such as Brazil. Our research indicates that the Brazilian tax system is structured in such a way that the poorer segments of the population are subjected to greater fiscal illusion, which in theory would harm the quality of our democracy. Although pending empirical confirmation, the questions proposed here open a promising path in the analysis of issues related to fiscal citizenship and tax transparency.

Because we believe that this mistaken perception of the tax phenomenon, which we call cognitive regressivity, may represent a real risk to the very formation of a state considered democratic. By interfering directly in the self-affirmation of the actual taxpayers as subjects of rights that can be sued in the public sphere, cognitive regressivity can lead to mistakes in the formatting of public policies, as well as hinder the development of positive actions by the State aimed at overcoming the existing underdevelopment in our country. It operates, therefore, as a force that tends to disarticulate the economic system and threaten the project of reducing social inequalities and eradicating poverty, which are also pointed out as objectives inherent to our Federal Constitution.

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