Economic Impacts of Possible Corrections to Withholding Income Tax Rates in the Brazilian Internal Environment

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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ABSTRACT

The central theme addressed is the economic analysis caused by the absence of adequate corrections in the IRRF rates (income tax) between the period 2007 to 2017, through the IPCA index (consumer price index), to maintain or increase social well-being, the population's disposable income. taxpayer and consumer purchasing parity. From the data collection and applicability of the research methods, it was found that the contributing families collected 180 billion reais more in taxes. Through econometric models, with statistical significance of 1% and at most 5% in the variables, the Breusch and Pagan tests were used, and the adoption of the Pooling method for data extraction. After the analyzes, the models demonstrate in a crystalline way the reduction of disposable income by 0.0728%, of national savings by 0.0862% and in consumption by 0.0532% for each 1% increase in the new amount collected from taxes. Leading to a minimization of the declarants' well-being and how this value, if entered in the productive means, would contribute to the increase of economic indicators, however, according to the research purpose, the current IRRF table that should be in force is presented.

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1. INTRODUCTION

The research was born due to the absence of an adequate correction of IRRF rates by an indicator that maintains parity of purchase, accumulation of savings and investment of families, as well as maintaining or raising the level of well-being. In the scope of the application of factor costs, the labor input occurs with the exchange of hours worked for remuneration. Such income makes up the income of the families that will be used to purchase basic consumer goods, such as: food, clothing, hygiene, investments, leisure or services. etc that improve the quality of family well-being.

Together with this, it can be said that the level of well-being is directly associated with the volume of disposable income after the incidence of taxes that individually or collectively can be earned for consumption or savings. According to the tax legislation in its Law 8134/90 (BRAZIL, 2019) which regulates the taxation of workers' income according to salary ranges, withholding at the source of payment the tax due for the income earned in the performance of services or jobs rendered to an employer [1].

In this context, the applicability of corrective measures of wages, aims to maintain the parity of purchase of household consumption products by families, removing or mitigating the effects of inflation on income and products, maintaining the level of well-being and quality of life.

Rocha (2002) attributes that the importance of the income tax through its incidence is an important factor in the distributive impact of the per capita income available to families, significantly minimizing the well-being of society [2].

For the readjustments of the minimum wages of families, it is accepted, through Law 13.152/15, the consumer price index as a correction factor (BRAZIL, 2019). Therefore, the same effect should be expected regarding the tax impact on income, causing null reflection of fiscal impact, where its omission is inclined to state that there is a hidden increase in the tax burden of direct taxes from families [1].

In this sense, the present study has as a research factor from a fiscal point of view to measure the impacting reporting population and the amount collected overpaid by the State and, through the economic perspective, to evaluate after updating the withholding income tax rates through the IPCA, what would be the impact on national disposable income, national gross savings and how much this would affect household consumption.

The main objective of this research is to determine the appropriate correction of IRRF rates through the IPCA index and to assess the economic impacts caused by the increase in disposable income, reducing purchasing power and directly impacting economic production and consumption chains. Specifically, it collects IRRF data between 2007 and 2017, correct the retention ranges using the consumer index - IPCA; verify intra-lane mobility for the reporting population and tax collected after the correction is incurred; demonstrate how much tax was collected by the state; assess economic effects using econometric methods.

2. METHODOLOGY

Objectively, the research takes place in the bibliographic form, because to infer about a certain subject, it is necessary to know about it. Therefore, this research must be carried out based on materials already prepared, such as books and scientific articles [3]. Cervo and Bervian (2002, p.66) defined bibliographic research as "[...] part of descriptive or experimental research, when it is done with the aim of gathering information and previous knowledge about a problem to which an answer is sought. or about a hypothesis you want to try" [4].

This, as far as it is concerned, has its definition in a way that best fits the objectives of this work, described by Gil (2002, p. 42) descriptive research has as its primary objective the description of the characteristics of a given population or phenomenon, or else, the establishment of relationships between variables [3]. Countless studies can be classified under this title and one of its most significant characteristics is the use of standardized data collection techniques, such as the questionnaire and systematic observation. [...] Among descriptive research, those that aim to study the characteristics of a group are highlighted: its distribution by age, sex, origin, education level, physical and mental health status, etc.

In addition, regarding the methodology used to prepare this work, it can be inferred that it will use quantitative research methods, which according to Richardson et al. [5] apud Marconi

and Lakatos (2011, p. 269) [...] it is characterized by the use of quantification both in the modalities of information collection and in the treatment of them through statistical techniques, from the simplest as percentage, average, standard deviation, to the most complex as correlation coefficient, analysis regression, etc [6].

This method will be used, as the rationale arises from the extensive collection of researched data, with structured time series serving as a basis for further analysis of the veracity and proof of the composition of the objectives of this work.

Following the description of Marconi and Lakatos (2011, p. 269), "[...] the researchers make use of large samples and numerical information [...]", and, moreover, based on "[...] in numerical measure and statistical analysis to establish patterns of behavior. It mainly seeks to expand data, that is, information". Advancing the research quantitatively, the analysis will appropriate statistical methods to reach the objectives [6].

They are the same authors who define statistical method. The role of the statistical method is, first of all, it provides a quantitative description of the society [...]. For example, social classes are defined and delimited, specifying the characteristics of the members of these classes and, afterwards, their importance or variation, or any other quantifiable attribute that contributes to their better understanding, is measured. However, statistics can be seen as more than just a means of rational description; it is also a method of experimentation and proof, as it is a method of analysis [6].

For the data collection procedure, it is, as far as it is concerned, a statistical survey and of paramount importance for the study, as it is through reliable research sources that the stratification of the results becomes consistent. The data collection of this study is carried out in a secondary way, through textbooks, scientific articles, published in journals obtained as a reference in the themes of this work. The main statistical databases such as the Brazilian Institute of Geography and Statistics (IBGE) and National Household Sample Survey (PNAD) were also used as a source. For the deepening of fiscal and economic data, the research focused on the contributions of the traditional websites of the Central Bank of Brazil (BACEN, 2019) and the Brazilian Federal Revenue Office (RFB, 2019) that they added positively with data

of fiscal collection, with economic curvature [7,8].

All the research resources brought together add up a solid foundation to establish the link between the fiscal effects resulting from a fiscal concealment that supports a delay in economic growth over time.

3. LITERATURE REVIEW

From this item will be presented elements necessary for the complete interpretation around the central approach of research. From the perspective of the concepts that will be mentioned it will be possible to obtain sufficient knowledge for the perfect analysis of the data collected in research, as well as the theoretical introduction to support the conclusions on the research problem.

3.1 Welfare Theory

The level of social welfare is associated with the standard of products that families can purchase and the quality of leisure they can enjoy according to the amount of income available for consumption. Mansfield (1982) points out in his work that the welfare economy covers a wide range of determinants, such as the optimal allocation of inputs between industries and the optimal distribution of goods among consumers, being dependent on the respective demands and relative production costs. The author also adds that most of the problems of income distribution focus on poorly elaborated government policies, which may, for the time being, encourage or even favor a class to the detriment of other people's losses [9].

It can thus be said that the rent effect, according to Pindyck and Rubinfeld (2002), causes a change in the consumption of an asset resulting from an increase in purchasing power, with the relative price kept constant, were added to the substitution effect the trend is that there is an increase in demand. So, the determination of choices between product A and product B is associated with the selling price and which will only be acquired by the consumer if the budgetary restriction makes sense [10].

This theory is classified and based on microeconomic approaches such as the Engel curve, where Mansfield (1982) reports that it can find the relationship between the amount of equilibrium gained from a good and the level of

income as long as commodity prices remain constant [9].

The authors further reinforce the contextualization attributed in the construction of the Engel Curve that, the quantity consumed of a given commodity in relation to the disposable income for consumption, the measure that the income (R$/month) The inverse ratio is of increase in the requested food units.

This income effect is treated by Pindyck and Rubinfeld (2002) as a change in the consumption behavior of one or more goods resulting from the increase in purchasing power, keeping their prices constant. It is worth mentioning the thought of Varian (2012) where he summarizes that the income effect can operate in both directions, which can increase or decrease demand, where when decreasing income may cause a decrease in the demand for normal goods and an increase in the consumption of inferior goods [10].

The substitution effect becomes more relevant as well-being becomes compromised due to budget restrictions, limiting families to enjoy certain leisure moments or purchase of some products. Affirming this substitution theory for increased well-being by shifting the budget constraint, Mansfiled (1982) consolidates that when the price of an asset changes, the consumer is affected in two ways, first reaches a different level of satisfaction and second probably replaces more expensive goods by other cheaper measures. However, the reverse effect is also true, as income rises, social satisfaction in enjoying products or services considered superior increases the sense of well-being [9].

In parallel with the objectives of this work, it is noticeable that the presence of the above-mentioned phenomena exists, as the displacement of the restriction It would be necessary to correct the analyses of the IRRF over time with the use of indicators that really transfer to the wage earner the fiscal effect consistent with the real situation of the economy. Combining this Varian (2012) collaborates that if the consumer strives to obtain his income, it is expected that the taxation of this income discourages [11].

Therefore, the space left by the hidden increase of IRRF due to state inefficiency is quite directly restricting the well-being and preferences of consumers.him to earn more, so that income after tax may restrict budget capacity.

3.1.1 Study variables

From the IRRF data set extracted through the Brazilian Federal Revenue Office, it was possible to stratify the metrics necessary to build a solid base of information in the research aspect and cause the need to add more economic elements that added together explain the general objective of the work.

In addition to this base, the price variation indicator was added. The IPCA was highly relevant in demonstrating the fiscal gap and income corrosion under the maintenance of purchasing power by families. Consequently, when it comes to tax effects and product prices for consumers, there is an embedded income distribution by the fiscal calibration on society, implying an inevitable consequence in social welfare behavior.

3.1.2 Methods

By structuring the data extracted from the large numbers of the Brazilian Federal Revenue Office, treated specifically according to the objectives of this work, a set of relevant data can be built for the interpretation of the problem caused.

The delimitation of the study period of the content takes place in the last 10 years, between 2007 and 2017, this because there is no more material available in the resources available in the research bodies, however, there were attempts to collect it through a face-to-face visit at the Brazilian Federal Revenue Agency at city of Carazinho/RS and at the Regional Police Station in the city of Passo Fundo/RS.

The analysis of the data set, part of the economic perspective of consumption and the increase of the population's well-being as the tax burden is minimized in the way it is collected, thus resulting in a more concise interpretation of adequate amounts to be paid by society, while maintaining parity in the purchase of essential consumer goods and services for families.

The starting point was to place the date and analysis ranges according to their original percentage and their base dates, after perfect ordering, the IPCA indicator was included for adjustments and updating of the original ranges

until the end of the bank. collected data. It is noteworthy that in the base year 2006 the survey did not accumulate previous lags, having as the initial period year zero and only from then on did the factors of analysis and overlapping of the corrected bands increase year after year through the data collected from the RFB applying the variation of the IPCA in this group of information forming the appropriate analyzes of 2007 and so on until the conclusion of the final year of study of 2017.

$$AC = AO + IPCA_{t1} \qquad (1)$$

Where AC represents the corrected rate; AO stands for the original rate and IPCA shows the broad consumer price index.

It is important to note that the previous year, after the incidence of correction factors, formed the basis for the analyzes of the following year, thus maintaining an interrupted sequence of values and bases of deduction, generating a new set of updated data according to the objectives described in this work.

As the analyzes were carried out, year after year a tax gap was revealed for the taxpayer, this hiding of the tax burden will be the way to identify how much the state started to collect in excess of taxes. The same calculation format will also be adopted to find out which slice of the population was impacted the most by the error described here.

$$DF = (AC\text{-}AO) *100/AO \qquad (2)$$

Where DF means fiscal lag.

Understood, that the percentage of lag found period after period becomes the portion to which it was charged in the collection of the IRRF, then this coefficient starts to be used as a basis for finding the results of the tax collected and the new reporting population.

The applicability of this coefficient starts to have a direct effect on each rate range to find the differences to be calculated, the construction of calculations through the application of the tax gap in percentage points, makes it tangible for the final calculation of the research results of the new reporting population.

$$NPD = (\text{-}PDO*CDF)/100+PDO \qquad (3)$$

Where NPD represents the new reporting population; PDO shows the original reporting

population; CDF measures the fiscal gap coefficient.

The same method of calculation for meeting the new reporting population was adopted to quantify the amount of the amount raised the highest for each range and period around the IRRF.

$$NVA = (\text{-}VAO*CDF)/100+VAO \qquad (4)$$

Where NVA means the new amount collected; VAO shows the original amount collected.

3.1.3 Econometric model

The econometric model shows the statistical, mathematical and economic relationship to assist in the resolution and analysis of effects or economic relationships between different variables at the same time (cross-section), over time (time series) or a combination of cross-section and time series (panel data). Therefore, econometrics has an important role to explain this structure.

According to Wooldridge (2006), econometrics is based on the development of statistical methods to estimate economic relationships, test theories, evaluate and implement government and private business policies [12].

Gujarati and Porter (2011) deal in their econometrics work, that panel data can detect and measure the effects that simply cannot be observed in a single pure cross-section or in a pure time series, in this sense the adoption for econometric modeling of this the work was based on panel periods to better demonstrate the effects between economic variables [13].

The estimation using the Pols or Pooling data analysis methods to which the ordinary least squares model is adjusted, stacking all observations and performing a complete regression, disregarding the cross-sectional nature and time series of our data. For the authors, when analyzing the results of the regression adopting the Pooled Regression applying conventional criteria of analysis, it is noticed that the coefficients in most of them present high significance in statistical terms, including the R². The use of pooling panel econometric regression analysis or stacked panel data where according to Gujarati and Porter (2011) allows a study over time of a variable or group of subjects, with the panel data being able to better detect and measure the

effects that simply cannot be seen in a pure cross-section [13].

To better represent the research regressions, the model was adopted:

$$Y_{it} = \beta1 + \beta2\ X_{1t} + \beta3\ X_{2t} + \beta4\ X_{3t} + U_{it} \qquad (5)$$

Where Y_{it} represents the dependent variable; X_{it} is the vector of explanatory variables; $\beta1$, $\beta2$, $\beta3$, $\beta4$ are the parameters to be estimated in the models. These factors are essential for the perfect verification of the statistical presence as a factor of statistical proof in a theoretical construction of tax concealment that directly raised taxes for families, causing negative effects on the economic variables analyzed here.

Thus, the applied regression model also includes all the tests necessary for the treatment and stabilization of the series, such as hypothesis tests, heteroscedasticity and error autocorrelation, unbalanced data, outdated values and unit root tests [13].

To measure the impacts, econometric models with panel data will be used to identify the effects that the new collection and the amount collected more have about Available Income (rd), Household consumption (consumption) and volume of resources of the National Gross Savings (savings), collecting quantitatively and impartially the representativeness of the economic effects caused as a research problem.

4. RESULTS AND DISCUSSION

The relevance of the concepts of the Laffer curve and the well-being theory, strengthen the concepts that an improvement in consumption patterns can be obtained through an improvement in the fiscal form of obtaining revenue. Therefore, Table 1 shows the number of taxpayers who declared in the analyzed period and who would no longer collect tax upon acceptance of the proposal presented, will be exemplified by period (year), as well as the amount that would be immune from the tax.

Here, the theme addressed by the present work becomes even more relevant, where the figures collected impact approximately 8.5 million taxpayers, who can enjoy an increase in social quality with tax relief on their income.

It is also interpreted that this discrepancy increases from the year 2015, whereas detected by the research and confirmed through Law 13.149/15 mentioned in the preamble of this work, no more corrections of any kind occur in the bands, generating anchoring in taxation, however, year year-on-year wage increases further expand this difference in favor of the state. Contemplating yet another objective proposed in this work, and contributing to the issues previously discussed, we will continue to report the differences found now for the tax collected the highest by the taxpayers in the original form and also after the incidence of the elaborated review.

The amount collected corresponding to each base year is analyzed individually at a rate, thus the collection by range and the quantification by data will become more crystalline, where through the acronym "C", Table 2 brings with it the amount collected after the incidence of the tax gap coefficient in the calculation base of collection (Table 2).

As can be interpreted in Table 2, the inclusion of new bands still in original standards of tax retention did not cause any mobility in the amount of the collected amount, nor in the totality of taxpayers who suffer tax subtraction in the payment of their salaries. On the contrary, as time goes by, there are signs of a strong increase in revenue.

The analyzes were based on real evidence collected through reliable sources of information and statistics for behavioral parameters of the society's income. From this moment on, the data already managed and updated through the IPCA will be evaluated.

The continuity of this behavior of transposition of bands and natural increase of deponents in each band even after the correction of the rates by the IPCA was already expected by the researcher, as it is a natural effect of increasing the average income of the worker, already understood and explained in the theoretical foundations.

Still in this context, observing the five current ranges of IRRF rates, there is a concealment of at least 180 billion reais subtracted more instantly when workers receive their wages, directing this income directly to the state coffers, nor even giving society the right to choose its consumer and welfare goods.

Contemplating and ratifying the proposals listed by the work, we arrive at the appropriate values not the rates obtained as convenient to maintain

Table 1. Synthesis of declarants

Year	Qty. declarants original	Qty. declarants fixed	Difference
2007	25.224.768	24.444.036	780.732
2008	25.772.355	24.617.753	1.154.602
2009	24.383.614	23.335.779	1.047.835
2010	23.962.983	22.595.134	1.367.849
2011	24.898.185	22.974.689	1.923.496
2012	25.873.856	23.517.010	2.356.846
2013	26.494.416	23.690.621	2.803.795
2014	27.581.083	24.103.252	3.477.831
2015	27.518.844	22.553.840	4.965.004
2016	28.003.647	20.861.886	7.141.761
2017	29.101.516	20.592.365	8.509.151

Source: Brazilian Federal Revenue Office (2019)

parity in the purchase of families, these collection bands would be in force for the year 2018 as a basis for the retention of federal taxes on income familiar, there was a final increase in all presentations of the rate ranges, and also the fiscal gap of the analyzed period (Table 3).

The demonstration of this direct effect on financial subtraction due to the tax increase on income collaborates so that instead of obtaining additions of higher quality products, the state grossly punishes and very clearly restricts those who obtain an income considered by themselves as high.

Research work also points out that the collection method works as anticipation, where the taxpayers are subject to withholding tax on a monthly basis, and only in the following year through the Annual Adjustment Declaration can there be a refund or an additional payment to the Tax Authorities for additional rents. Collaborating for the formation of this data analysis, Carvalho et al. (2008) reveal that when a tax increases its rate automatically increases economic activity and the efficiency of markets are reduced [14].

If the theory expressed by Carvalho et al. Is obtained as a basis, as workers earn increases in income gains, conceived here by union increases and by the government's definition through the national minimum wage, their analysis of withholding tax should follow the same indicator.

In this way, the reflexes would be equalized and the tax increase neutralized by the equivalence of the increases in the bands established for withholding tax, it is understood that if the state does not occur in a hidden way, it is increasing the tax burden and subtracting monthly financial resources from taxpayers.

This statement is so true that during the last 10 years analyzed in the data collection established for the formulation of the analyzes, the amount of approximately R$ 180 billion reais was paid more for an omission by the state to correct the IRRF analyzes.

It should be noted that this is the current pure value added up year-after-year, without the application of any indicator or correction deflator, which leads us to believe that the effect on the consumer market and reflexes on GDP and well-being indicators can be maximized after correction.

As a way of reinforcing the research aspects, it is contextualized here through the work of Carvalho et al. (2008) the theory developed by economist Arthur Laffer Which illustrates the relationship between the marginal income tax rate and your tax revenue. Tax revenue will be very low, both for low and high analyzes. Thus, when the marginal tax rate is very high, its reduction will imply an increase in tax revenue [...] [14].

In this context, individuals will prefer to engage in activities that are not subject to the effects of such high taxation, thus remaining the monetary stimulus for them to work for a higher disposable income and with less payment of taxes on their salaries, which may generate informality.

Mankiw (2014) calls it dead weight, the way in which a tax is associated with falling welfare by reducing consumer surplus destined for consumption, directly affecting their choices and resulting in market distortions [15].

Converging the idea addressed by the author to the topic addressed by the research, it is simple to assimilate how the absence of disposable income taxed on his salary will change consumption patterns and, consequently, the production chains, in addition to possible changes in the consumption of superfluous or higher goods.

4.1 Economic Impacts

Through the Breusch and Pagan tests, it allows you to check if the variance between individuals is equal to zero, that is, if there are no significant differences between the analyzes (H_0: pooling model, that is, there is no effect on panel), or, on the other hand, if there are statistically different differences between the individuals (analysis) of the sample (H_A: random effects).

For the study of the dependent variables, the time series extracted from the System of National Accounts in the same coverage period of this research were selected, with disposable income, national gross savings, and household consumption being the dependent variables (Table 4).

The test results are shown in Table 4 and, based on the result obtained, the null hypothesis that the pooling model offers more appropriate estimators cannot be rejected, that is, there are no statistically significant differences between the analyzes over time, justifying the adoption of panel modeling.

Another test that allows us to affirm that the adoption of panel modeling is adequate for the data is the Chow F test, whose result is presented in Table 5 of the estimation of random effects. It is not possible to reject the null hypothesis (H_0) that all analyzes are the same.

As discussed in the Breusch and Pagan test, the Chow F test also allows us to say that the pooling method will generate appropriate estimators for the analysis of economic impacts on certain variables. Rocha (2002) characterizes that well-being is associated with the composition of the family's distributive income in consumption and savings dynamics, where the available per capita family income raises social quality [2].

Based on the justification found,econometric models seek to elucidate the relationship between the overpaid tax and how much this

value would represent if it were available to families, generating economi aggregates. Putting the variables in an econometric comparison, the theory starts to be revealed quantitatively, strengthening the finding that by omitting an appropriate correction in the IRRF tables, the population's power of consumption and income from households and the accumulation of national gross savings are removed (Table 6).

From the coefficients estimated in the panel data regression, it is possible to extract the economic impacts and effects that this tax increase causes in society (Table 7). Thus, using the hypothetical economic deductive principle, one can foresee that looking at this scenario in isolation and considering the other constants, ceteris paribus, the increase in household disposable income through correction of withholding taxes, tends to contribute to increase domestic consumption and possibly to increase domestic savings in the country.

The interpretation through the applicability of the econometric coefficients brings in its result the variable disposable income that for each 1% the most collected of IRRF, families failed to obtain the value of 17.3 billion to increase their well-being. Following this same perspective, national savings are impacted by the fact that for every 1% of the most collected IRRF, the country stopped accumulating the amount of 120.5 billion reais in national gross savings.

However, as illustrated by Graff (2015), Brazil being an open economy, it may incur that the accumulated capital is not absorbed in its entirety in savings, due to obtaining greater gains, as well as the placement of part of this is also correct [16]. The accumulation generated may serve as a destination for household investments by families, but in the long run it contributes to the increase of the country's domestic investment.

As for the consumption of Families, the discrepancy was even more relevant, where for each 1% more collected from IRRF, families stopped consuming in the economy the amount of 604.5 billion in household goods. The results obtained confirm a revision of the IRRF as a claim to increase the country's economic potential, as already stated by SINDIFISCO (2019), the taxpayer is paying more Income Tax each year due to the delay in the correction of the income tax table. Individuals in relation to official inflation [17].

Table 2. Rate summarize (R$ Billion)

Períod	Exempt	Exempt C	7.5%	7.5%_C	15%	15%_C	22.50%	22.5%_C	27.50%	27.5%_C	Research
2007	1.85	1.80	-	-	8.54	8.27	-	-	49.60	48.08	1.84
2008	1.76	1.68	-	-	8.23	7.86	-	-	60.27	57.57	3.15
2009	1.22	1.17	2.82	2.70	3.42	3.27	3.64	3.49	59.13	56.58	3.02
2010	1.38	1.30	3.11	2.94	3.99	3.76	4.24	4.00	68.51	64.59	4.63
2011	1.43	1.32	3.52	3.25	4.65	4.29	4.94	4.55	80.48	74.27	7.34
2012	1.47	1.34	3.80	3.45	5.37	4.88	5.80	5.27	89.66	81.48	9.68
2013	1.51	1.35	4.15	3.71	5.97	5.34	6.58	5.88	96.60	86.37	12.16
2014	1.63	1.42	4.57	3.99	6.77	5.92	7.54	6.59	110.37	96.44	16.52
2015	1.78	1.48	4.74	3.88	7.10	5.77	8.16	6.59	122.37	98.79	27.63
2016	1.40	1.06	5.16	3.84	7.69	5.68	8.79	6.44	133.50	97.76	41.76
2017	0.94	0.68	5.38	3.80	8.13	5.70	9.38	6.52	148.07	102.90	52.30
Total	16.37	14.60	37.25	31.56	69.86	60.74	59.07	49.33	1.018.57	864.83	180.05
T. Rate		1.77		5.69		9.12		9.74		153.74	180.05

Source: Author Research (2019)

Table 3. Calculation of aliquots

Original aliquotes		Corrected aliquotes		DF
-	1.903,98	-	2.536,42	33.22%
7.5%	1.903,99 a 2.826,65	7.5%	2.536,43 a 3.802,00	34.51%
15.0%	2.826,66 a 3.751,05	15.0%	3.802,01 a 5.068,49	35.12%
22.5%	3.751,06 a 4.664,68	22.5%	5.068,49 a 6.334,29	35.79%
27.5%	4.664,68 a	27.5%	6.334,30 a ...	35.79%

Source: Author Research (2019)

Table 4. Breusch and Pagan test for random effects

Dependent variable	Variance	Standard deviation	Chi²
Lrd	0.0947859	0.3078733	0.00[ns]
Lpoupança	0.1201468	0.346622	0.00[ns]
Lconsumo	0.0542132	0.2328374	0.00[ns]

Source: Author Research (2019); *** significant at 1%
** significant at 5%; * significant at 10%; ns not significant

Table 5. F Chow test

Dependent variable	Statistics F	Prob
Lrd	$F_{(4, 44)} = 1.32$	0.2759
Lpoupança	$F_{(4, 44)} = 1.27$	0.2958
Lconsumo	$F_{(4, 44)} = 1.30$	0.2854

Source: Author Research (2019)

Table 6. Estimated coefficients for pooling data

Dependent variable	Constant	Nipmais	Lnva	Adjusted R²
Lrd	15.03215***	-0.0191769**	-0.0728595*	0.1311
Lpoupança	12.83739***	-0.022814***	-0.0861914**	0.1513
Lconsumo	11.20871***	-0.0137761***	-0.0532124*	0.1141

Source: Author Research (2019); *** significant at 1%; ** significant at 5%; * significant at 10%; ns not significant

Table 7. Economic Impacts

Série's Log	Tax +	Effect	DF	SCN Incidence R$ Millions	Impact R$ Millions	Significance
RD	1%	-0.0728%	35,79%	665.851	17.375	5%
Poupança	1%	-0.0862%	35,79%	3.907.272	120.543	1%
Consumo	1%	-0.0532%	35,79%	31.753.511	604.587	10%

Source: Author Research (2019)

5. CONCLUSION

Regarding the volume collected from taxes, the research was able to capture significant evidence of tax increase through concealment and effective absence in the incidences of the tax bases, reflecting and impacting the increase in taxpayers who could or would be exempted, or else allocated in lighter rates. of collection. Based on the same analyzes previously exposed, more appropriate behavior occurs in the collection.

Reinforcing the theoretical foundation and the results achieved during the research of this work, they were elucidated through statistics and econometric models, really measuring the impacts of this increase in disposable income available to society. However, in the economic and fiscal spheres, there is a very precise approach to some microeconomic variables that would stimulate an offer of greater quantity and quality due to an aggregate demand provided by the increase in consumption patterns as a result of income.

However, the data congestion zone occurs that even though the econometric models obtained suffer the direct effects of the R$ 180 billion collected more and converted by the population into consumption or accumulation of national savings, there is a lack of scientific and bank materials. Data to then measure how much this lack of resources would cause a reverse effect on public accounts to cover the fiscal deficit of this small collection.

When loaded this other side, it also refers to the monetary models necessary for the rollover of the national public debt, as this lack of resources would be financed by the government and repatriated to society in another way, either through another tax or through interest paid through public debt of the Treasury Direct.

For the complete analysis, access to models of monetary and fiscal policy is revealed to be extremely necessary, where it is precisely noted how the perfect corrections of the IRRF analyze by the index that composes the readjustment of consumer prices, can affect growth of the country in economic terms.

In other words, the burden of the absence of income with the state would be reflected in the tax otherwise the tax cost of non-payment, this factor would only be remedied for society if the state had fiscal balance on its expenses.

This second stage of probation through econometric models elucidated and proved to a very large extent the effects of a tax increase in face of a minimized tax concealment in indexes that erode the purchasing power and accumulation of savings of families, with direct effects on the factors of consumption.

It was considered the expression that attributed the correction factors suggested by the present work, the standards of quality of life of the reporting population are raised, considerably boosting quantitative reflexes in the production chains and increase of the Brazilian gross domestic product. It should also be noted that the greatest economic impact generated by the R\$ 180 billion provision would be the appropriate way to treat the Brazilian taxpayer.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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