IMPACTS OF THE NEW FISCAL REGIME ON THE SUPERIOR COURT OF JUSTICE: A FORECAST BASED ON THE COURT'S BUDGETARY EXECUTION HISTORY

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Abstract

This study initially investigates the implementation of the Brazilian New Tax Regime (NRF) due to the limitation of primary spending over 20 years, with the hypothesis that the persistent growth of mandatory expenses will restrict discretionary expenses to critical levels. With a particular focus on the Brazilian Justice system, this concern is aggravated by the main budget balance related to both personnel and benefits expenses. This study then assesses the impacts and forecasts of the implementation of the NRF on the Brazilian Superior Court of Justice (STJ). To this end, this research analyses the time series of budget execution from 2010 to 2019 and also uses data to make budgetary forecasts until 2026. This is done using the additive Holt-Winters triple exponential smoothing statistical model. The results found that mandatory expenses should confirm the expectation of growth above the level of readjustment of the limit, compressing costs and investment. This challenge set by the NRF is therefore being met by the STJ's economic effort, which, so far, has proved efficient, and based on our predictions, should intensify until 2026.

Keywords: new tax regime; spending ceiling; prediction of time series, Holt-Winters mmethod, Superior Court of Justice.

1. Introduction: Primary deficit target.

Stagflation. "*The worst economic crisis since the 'Great Depression' of 1930*" (Época 2016). "*Brazil on the verge of a fiscal abyss*" (Valor econômico 2019). "*Breakthrough in government accounts*" (G1 2019). "*From an economic boom to a deep recessio*n" (Infomoney 2019). These are some of the headlines that Brazilians have faced in recent years.

Since 2014, the Brazilian economy has plunged into a the dynamic of recession, with impacts on public accounts and with consecutive primary deficit results reaching a record in 2016, with almost R$ 160 billion in the red in the clash between primary revenues and expenses of the central government[1].

At this time, the Executive Branch had already proposed the implementation of a "spending ceiling" to combat the even greater depreciation of the government's accounts and the country's economy. Thus, the Constitutional Amendment Proposal n. 241/2016, which became the Constitutional Amendment no. 95/2016 on its approval, instituted the New Tax Regime (NRF) in Brazil. With this legislative innovation prescribed in constitutional terms, the objective was to impose limitation on the growth of expenditure to real values for the next 20 years. To this end, individual limits were set on the Executive, Judiciary and Legislative Branch, the Federal Public Prosecutor's Ministry, the National Council of the Public Prosecutor's Ministry and the Public Defender's Office.

In terms of the budget, the Judicial Branch represents less than 5% of the overall budget of the Union. Its organs all have in common the characteristic of having a predominance of the mandatory budget among primary expenditures, allocating an average of 86% of their annual allocation to a linked category of expenditure. Within the scope of the Judiciary is the Superior Court of Justice (STJ), the highest body of the justice (state and federal) of constitutional origin, whose main competence is to standardize the interpretation of Brazilian federal legislation, with the exception of issues related to specialized courts, and ultimately resolve civil and criminal disputes. The STJ is part of the public

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[1] According to fiscal and primary result statistics. Available at:
< https://www.tesourotransparente.gov.br/visualizacao/series-temporais-do-tesouro-nacional> Access in 04 jan. 2021.

administration and enjoys administrative and financial autonomy, currently managing an annual budget of R$ 1.6 billion[2].

The administrative function is essential to the Executive Branch[3], which thus forms the largest portion of the Union's budget and, consequently, the leading role in studies on the consequences of adopting the "spending ceiling". However, the administrative function is exercised differently by the Judiciary in the management of its assets, contracts, investments, servers, among others, which depend on financial resources for their maintenance, creation or expansion. In this economic tuning fork, it is also important that the organs of the other powers understand the innovations brought about by the EC n. 95/2016 adjusted to their budget peculiarities. In particular, the focus is on the budget of the Superior Court of Justice.

Therefore, this is the thematic section of the present study, which has the general objective of analysing the impacts and making predictions of the implementation of the New Tax Regime in the budget of the Superior Court of Justice, and bibliography details. The second section contains the theme of the main apparatus and aspects of the implementation of CE n. 95/2016, considered as the thematic focus of the study. The third section details the methodological procedures adopted for the calculations. Hence, the fourth section presents the calculation of the historical series of budgetary data of the STJ and the analysis of the observed results and highlights the behaviour of mandatory and discretionary expenses in relation to the projection of the spending limit.

2. Contextualization

Both the Inter-ministerial Explanatory Memorandum of the Executive Branch and the vote of the rapporteur for the Constitutional Amendment Proposal (PEC) n. 241/2016 in the Chamber of Deputies[4] agreed that the initiative aimed at reversing, both in the medium and long term, the situation of acute

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[2] This represents 0.1007% of the total of 1.6 trillion of the Fiscal and Social Security budgets, excluding expenses with Transfers, Credit Operations and Federal Public Debt. Law no. 13,978 of January 17, 2020 - Annual Budget Law 2020 - LOA 2020, annex II.

[3] CARVALHO FILHO, 2012, p.3.

[4] Available at: https://www.camara.leg.br/proposicoesWeb/prop_mostrarintegra?codteor=1495741 Accessed on Oct 10. 2018

fiscal imbalance in which the Federal Government has in recent years been placed, mainly with regard to the level of indebtedness, which has created a limit for the growth of primary expenditure in the Federal Fiscal and Social Security budgets.

After several parliamentary debates during its passage through the National Congress, the New Tax Regime (NRF) was brought into law by Constitutional Amendment No. 95, of December 15, 2016, creating articles 106 to 114 in the Constitutional Transitional Provisions Act (ADCT) of the Constitution Federal Law of 1988. Articles 106, 108 setting out the spending limitation rules by detailing who, when, how much, how and where, while article 109 details the applicable measures in the case of a breach of the limit. Articles 110 to 114 address more specific issues such as the spending on public health services, maintenance and development of education and waiving revenues, which are not the direct object of this study.

It is worth noting that any limitation imposed by the spending ceiling is directed to expenses classified as primary, that is, those that are computed for the purposes of calculating the primary result[5].

The limit value for the year 2017 was based on the primary expenses paid in 2016, including payments arising from expenses recorded as unpaid liabilities[6], which increased by 7.2% for inflation adjustment[7]. This amount was calculated as a basis for subsequent years whose limits would be defined by the ceiling value of the immediately previous year and corrected by the accumulated variation of the Extended National Consumer Price Index - IPCA[8], or any other index that may replace it[9].

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[5] Primary expenditures are expenditures intended to provide public goods and services to the population, such as health, safety, education, works, funding for government programs, in addition to maintaining the state structure itself. Non-primary expenses (or financial expenses) are the expenses with the payment of a public debt, both with interest and with the principal of the debt (amortization), and do not contribute to the primary result or the calculation of the ceiling spending.

[6] According to Law 4.320 of March 17, 1964, Art. 36. "Remaining Payables are considered to be the expenses committed, but not paid until December 31, distinguishing between processed and unprocessed"
Thus, even if an expense was committed in previous years, its financial impact is recorded in the year of its payment, being considered for purposes of calculating the spending limit.

[7] According to ADCT art.107, §1 °, items I and II.

[8] Published by the Brazilian Institute of Geography and Statistics - IBGE, for the twelve-month period, ended in June of the previous year to which the budget law refers.

[9] The NRF foresees that, as from the tenth exercise of the new regime, an exclusive initiative law of the Head of the Executive Branch may propose a different correction method for the spending limit, according to article 108 of the ADCT.

The feasibility of complying with the PEC in the specified horizon, however, comes up against the problem of a squeeze in discretionary expenses by the growing and rigid mandatory expenses, which commits about 90% of these primary expenses[10] in 2017, with a projection of reaching a level of 98% of the total in 2021, therefore flattening discretionary spending to a level that would make it impossible to achieve higher rates of GDP growth, public investment and even the functioning of the public sector, as shown in the following graph:

Graph 1 - Authorized allocation of compulsory v discretionary primary expenditure (2000 - 2021)
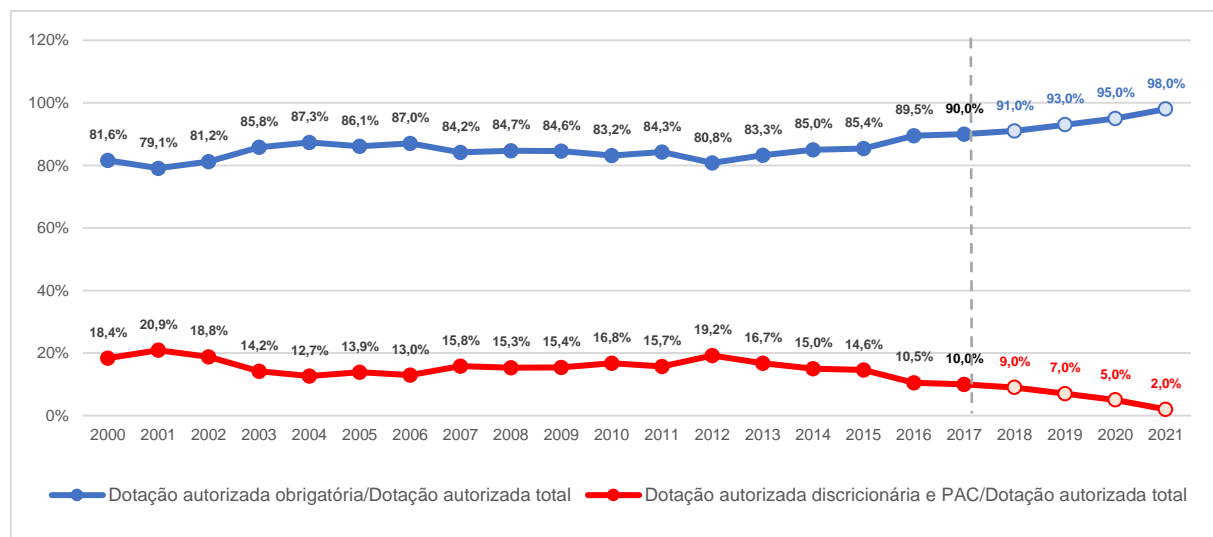
Mandatory authorized appropriation/ Total authorized allocation

Discretionary authorized appropriation and PAC/Total authorized allocation

Source: Prodasen/SIAFI/SIOP[11]

This hypothesis was also suggested in the studies on the budget of the organs of the Judiciary, mainly after the approval, on July 20, 2016, of the change in the Plan of Positions and Salaries (PCS[12]) of its employees. As we shall see, auch an increase would have a direct and profound impact on the mandatory expenses for the coming financial years. However, it did not make up the 2016 payment base, whose execution (actual payment) was defined as the paradigm for implementing the "spending ceiling".

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[10] Information reiterated on page 6, Annex IV (fiscal targets) of the LDO 2020.

[11] Mandatory authorized allocation (RP1 filter), Discretionary authorized allocation and PAC (RP filters 2, 3, 6 and 7) and Total authorized allocation (All except RP 0, in order to cover only primary expenditure.)

[12] Law No. 13,317, of July 20, 2016, which authorized progressive adjustments in successive and non-cumulative installments until January 2019 of 12% on the base salary of the category and 140% on Judicial Gratification (GAJ).

Although not classified as personnel expenses there are also a number of indemnity benefits to which civil servants are entitled[13] and are directly linked. Thus, combining the expenses with indemnity benefits to the civil servants and the expenses on personnel, it was already perceived in the PEC debate phase the commitment of 86% of the average budget of the Judiciary with mandatory expenses. This characteristic shows the impact of the increase granted by the PCS linked to the limitation of the "spending ceiling", since the percentage left over for discretionary expenses, about 13% of the total, would not offer enough margin to offset the growth in personnel and the different government agencies' own maintenance and investment demands.

Graph 2 - Composition of primary expenditure among the different powers - 2016 (in % of the total subject to the ceiling)
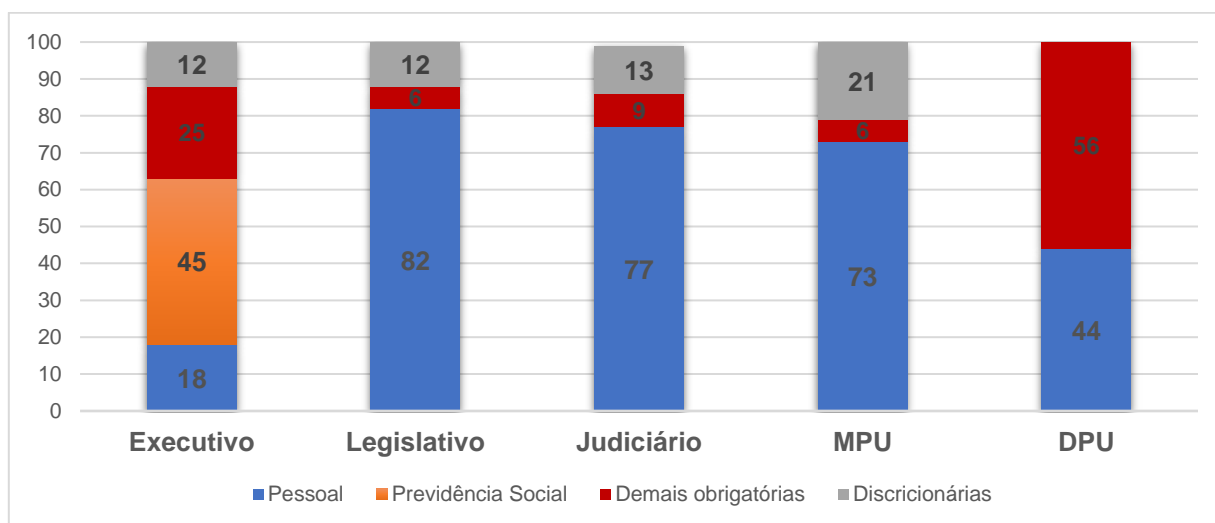
Personnel, Social Security, Other mandatory, Discretionary Payments

Source: *'Siga Brasil'*. Prepared by IFI, 2017[14]

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[13] Medical and dental assistance, food allowance, housing allowance, pre-school assistance, transport assistance, funeral assistance, among others of a mandatory nature.

[14] Available at <http://www2.senado.leg.br/bdsf/bitstream/handle/id/530744/IFI_NT_05_2017.pdf> Accessed on October 30, 2018.

In this context, a provision was included in the text of the aforementioned PEC providing for[15] the possibility of the Executive Branch to offset the excess of primary expenditure of the other branches by reducing its limit to the maximum percentage of 0.25%. This measure was authorized only for the first three years of the NRF's effectiveness, the years of 2017, 2018 and 2019, as a result of the period of implementation of the salary adjustment required for civil servants in the Judiciary.

It is worth noting that, in mid-2016, during the recognition of the then PEC 241/2016 in the Chamber of Deputies, which had the outline of the paradigm for the 20 years of the spending ceiling linked to the amounts actually paid in that year, as well as including left over payments, the opposite incentive was generated to the one initially adopted in 2016 to reduce spending: this understanding started to maximize payments in 2016, in order to guarantee a higher reference value for the incidence of inflationary adjustments and, consequently, a higher spending limit for the next years.

Thus, the saving measures were replaced by the achievement of full budget execution, including the STJ's proactive stance towards resolving disputes with its creditors, in order to make payments of amounts still registered and those possible remaining payments in 2016.

What is also noteworthy is the significant payment made, with retroactive effects, resulting from the administrative decision at the STJ Plenary Session on March 2, 2016, which granted a percentage adjustment of 13.23% to the salaries of civil servants, which was subsequently suspended by a federal supreme court injunction[16].

The sum of these factors resulted in a unique condition among all the organs of the Union: the STJ obtained the limit of financial expenditures in an amount higher than its budgetary authorization in 2017.

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[15] Converted to §§7 and 8 of article 107 of the Transitional Constitutional Provisions Act of the Federal Constitution.
[16] The adjustment originates from Laws 10.697 / 2003 and 10.698 / 2003, which provided for remuneration aspects of federal civil servants. The Payment Decision was effectively overturned in March 2018 by the STF.

Such a situation was not originally provided for in the provisions that instituted the New Tax Regime or in the Budget Guidelines Law - LDO 2017[17], which were considered only in the following year with the inclusion of a specific paragraph in article 25 of LDO 2018. This article 25 established the addition of the difference to the limit of the organ. Thus, the amount of R\$ 51,229,445[18] plus the IPCA update in 2017, was incorporated into the STJ limit.

Even so, the aforementioned need for review, adjustment, containment, reengineering, dynamization, reformulation, prioritization of the primary expenses of the Judiciary (and so many other terms repeated in several studies on the subject) came up against the characteristic of a binding budget and the rigidity of these bodies, which can be observed in the history of primary increment expenditure in the last decade, demonstrated in the graph below:

Graph 3 - Other Powers - Growth in Primary Expenses 2008-2017
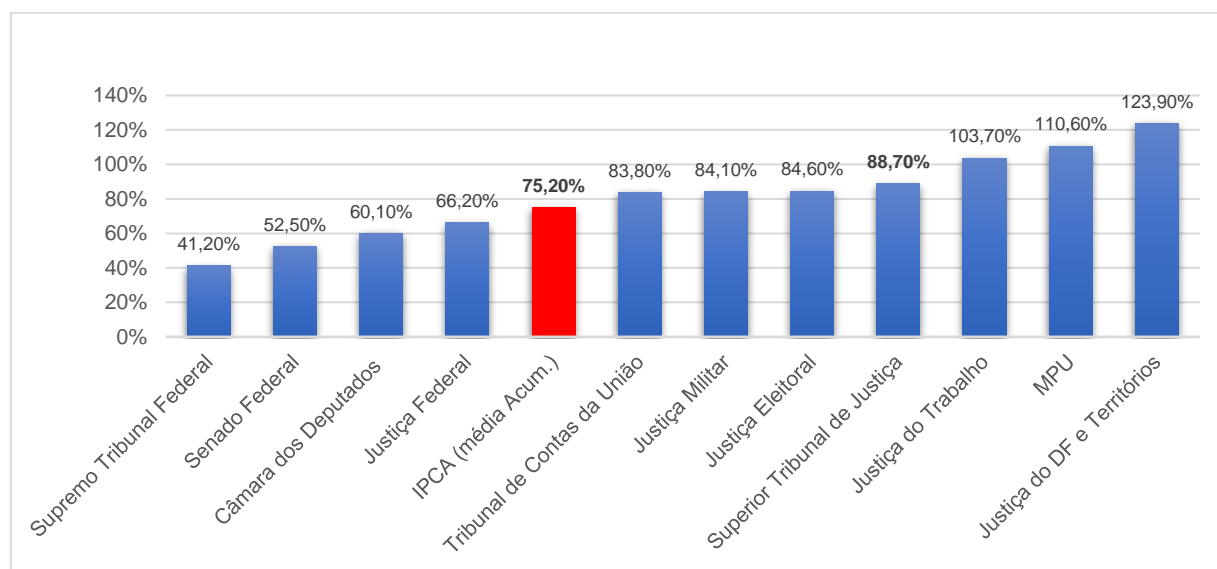
Source: Technical Note no. 23/2017 CONORF[19]

Graph 3 shows that the growth in primary expenses of 7 out of the 11 Judiciary organs, Legislative Power and *'Ministério Publico'* (MPU - the public prosecution's office), in the period from 2008 to 2017,

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[17] Law No. 13,408 of December 26, 2016.
[18] According to Circular Letter No. 3 SOF / MP of June 2, 2017.
[19] Technical Note no. 23/2017 CONORF. Available at: <http://www2.camara.leg.br/orcamento-da-uniao/estudos/2017/nt23-2017-repercussoes-da-emenda-constitucional-no-95-2016-no-processo-orcamentario> Accessed on 02 nov. 2018.

was higher than the accumulated average variation of the IPCA (75.2%), indicated in the column highlighted in red. This trend of real expenditure growth signalled that most of these agencies could find difficulties in adapting their budgets to the limits, in the short term, as they would need a substantial change in their spending profile.

In these terms, the table estimated for 2020 compared to 2017 indicated the need for an average reduction among the Judiciary bodies (except the STJ) of 35% of the budget amount. The individualized values per body are shown in table 1, below:

Table 1 - Exceeding Primary Expenses (2017 and 2020) Constant R $ billion (base 2017)

BODIES SUBJECT TO LIMITS	Discretionary Expenses		Comparison
	2017	2020	Redução
CHAMBER OF DEPUTIES	0.83	0.69	-16.94%
FEDERAL SENATE	0.43	0.38	-11.23%
TRIBUNAL DE CONTAS DA UNIÃO	0.25	0.2	-20.49%
FEDERAL SUPREME COURT	0.23	0.15	-36.51%
SUPERIOR COURT OF JUSTICE	**0.3**	**0.31**	**4.60%**
FEDERAL COURTS	1,91	1.14	-40.24%
MILITAR COURTS	0.08	0.06	-31.28%
ELECTION COURTS	1.82	1.57	-13.73%
WORK COURTS	2.47	0.64	-74.27%
THE FEDERAL DISTRICT COURSTS AND IS TERRITORIES	0.39	0.24	-38.34%
NATION COUNCIL OF JUSTICE	0.15	0.11	-26.67%
PUBLIC DEFENSE OF THE UNION	0.03	-0.02	-188.60%
PUBLIC MINSIRTY & THE NATIONAL COUNCIL OF THE PUBLIC MINISTRY	1.35	1.05	-21.82%
TOTAL	**10.24**	**6.52**	

Source: Technical Note no. 10/2017 CONORF, p.17[20]

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[20] Data: In the base scenario, the following premises were adopted:

In view of the above, many decisions were taken within the scope of most of the Judiciary bodies, including the STJ, in order to reduce expenses, among which were[21]:

• Adaptation of the opening hours of the buildings in order to reduce the consumption of electricity and water.

• Limitation on the purchase of airline tickets and daily allowances.

• Reduction of jobs in the cleaning, maintenance and serving contracts, surveillance, drivers, receptionists, elevator operators and employees and renegotiation of readjustments in these contracts.

• Preference for hiring in-house instructors or lecturers who do not require the cost of travel and accommodation.

• Reduction in the granting of daily allowances with prioritization of magistrates in the exercise of jurisdiction, as well as their direct assistants.

• Reduction of the internship program.

• Rationing of consumables.

• Adequate scheduling or suspension of projects that needed new purchases/investments.

• Implementation and expansion of the teleworking modality.

• Replacement of printed journals with virtual ones

• Optimization of people management through internal removal contests, competency-based management projects and rationalization of vacancies in Annex V.

• Restriction/prohibition of overtime, mainly on Saturdays, Sundays and bank holidays.

The impact of these measures, as well as the peculiarities that occurred in the implementation of the NRF in the STJ's budget, detailed throughout this section, are demonstrated in the observation of the

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- mandatory primary expenses with a vegetative growth rate of 1.5% a.a., including annual PCS impact and disregarding new expenses with personnel provisions.
- the amount of discretionary expenses represents the difference between the total expenses (constitutional limit added to possible compensation, when applicable) and the amount allocated to mandatory expenses. Therefore, the projection of discretionary expenses does not consider the historical evolution of the aggregate, which is admitted as an adjustment variable in the system in question.

Technical Note no. 10/2017 CONORF. Available at: http://www2.camara.leg.br/orcamento-da-uniao/estudos/2017/ET10_2017.pdf> Accessed on 02 Nov.2018.

[21] According to Official Letter 0232/2019-TCU / Semag of 10/18/2019, annex IV - Descriptive list of measures adopted to comply with EC 95/2016, based on Judgment 2455/2019-TCU-Plenary.

agency's execution of data which is dealt with in the results section. However, a brief contextualization of the thematic section is first presented: the STJ budget.

3. The STJ budget

Since 1988, the Superior Court of Justice (STJ), as a body of convergence of the Justice, has the competence of standardizing the interpretation of infra-constitutional rules throughout Brazil. The Federal Constitution of 1988, in its article105, in addition to disciplining the competences of the STJ[22], established how the National School for the Training and Improvement of Magistrates - ENFAM and the Council of Federal Justice - CJF operate. Despite being chaired by the President of the STJ, the CJF has an autonomous budget, while ENFAM appears as a management unit intertwined with the STJ's budgetary unit, thus included in the Court's budget.

The STJ budget follows the general dynamics of the other judicial organs, with a focus on personnel expenses which represent an average of 75% of expenses paid in comparison to the total in the last decade (2010 to 2019). This proportion recorded a peak of 80% in 2012, when there was a decrease in the total budget execution and a consequent reduction in both benefit payments (6%) and discretionary expenses (14%). These categories had an average in the period (2010 to 2019) of 8% and 18%, respectively.

In general, expenses on personnel and charges include the payment of active, inactive and retired civil servants and magistrates, in addition to the contribution from the agencies to cover the Federal Public Servants' Pension Scheme. Other expenses that are not directly related to personnel, but have a character linked to this, are the mandatory benefits to employees such as food allowance, transport allowance; pre-school assistance, funeral assistance; natal assistance, Imprisonment aid, medical and dental assistance, among others[23].

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[22] According to §2º, art. 2 of Law 11,798, of October 29, 2008.
[23] Complementary Law no. 101 of May 4, 2000, Art. 17. Current expenses resulting from a law, provisional measure or normative administrative act that establish the legal obligation for its execution for a period of more than two years are considered mandatory on a continuous basis.

In nominal terms, the total paid for primary personnel expenses in the STJ was R$ 802,600,121 in 2015, before the effects of the increase in the PCS, and R$ 1,090,743,603 in 2019, after the full effect of the adjustment of the PCS. In other words, there was an increase of R$ 288,143,481, of which R$ 224,308,143 was forecast as arising from the implementation of the PCS, according to data issued from the then Ministry of Planning (table 2).

Table 2 - Projection of impact on primary expenses resulting from Law No. 13,317, of 7/20/2016 (PCS adjustment)

PRIMARY EXPENDITURE	PCS EFFECTIVE SERVERS			
	2016	**2017**	**2018**	**2019**
PCS STJ	36.957.943	101.852.329	150.003.353	224.308.143
PCS TOTAL	1.119.558.244	3.080.692.633	4.539.143.652	6.788.782.760
STJ/TOTAL (%)	3.30%	3.31%	3.30%	3.30%

Prepared by the author. Source: Circular Letter nº 195/2018-MP of 05/16/2018.

In addition, it was found that the number of active staff members of the agency, the main component of personnel payments, began to decrease in 2016, which precludes the possibility that the increase in personnel results from an increase in the number of employees.

On the other hand, the resources that are allocated are based on the decision-making power of public managers. These are called discretionary expenses and appear as a minor portion in the Judiciary

budget, being mainly destined to budget subfunctions[24] of general administration, media, training of human resources and information technology[25].

The 2019 Annual Budget Law authorized the STJ budget allocation in the amount of R$ 1,644,751,462, distributed among four programs and sixteen budgetary actions, among projects, activities and special operations. Regarding the classification by nature of the expense (Group of Nature of Expense - GND), whose focus is the object of the expense, there is a division between GNDs 1 - Personnel and Social Charges, which represented 80% of the expenditure of 2019; 3 - Other Current Expenses, totalling 19%; and 4 - Investments, with 1% of the 2019 budget paid.

For a more up-to-date and detailed view, Table 3 below breaks down the nature of expenditure at the element level by highlighting the three spending objects that made up the highest level of payments in 2019:

Table 3 –Expenses: Expenses paid by the STJ in 2019 organized into the main expense elements

Group 1 - Personnel and Social Charges	Amount paid (R$)
11 - Salaries and fixed benefits - civil servant personnel	660,693,649
01 - Retirement. RPPS, Military Reser. Remuneration and Reform	347,960,363
13 - Employers' obligations	109,109,092
Other elements	74,147,121
TOTAL	**1.191.910.225**
Group 3 - Other Current Expenses	**Amount paid (R$)**
37 - Leasing of labor	116,740,692
39 - Other third-party services - PJ	81,055,481
46 - Food assistance	31,887,107

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[24] The functional classification, instituted by Ordinance No. 42, of April 14, 1999, of the then Ministry of Budget and Management, is made up of functions and sub-functions, and seeks to identify in which areas of government, expenditure action will be carried out.

[25] The main budgetary programs, actions, functions and subfunctions of the organs of the Judiciary were observed in volume III of the Annual Budget Laws from 2010 to 2020.

Other elements	53,726,342
TOTAL	**283.409.621**
Group 4 - Investments	**Amount paid (R$)**
40 - Information and communication technology services	7,208,475
52 - Equipment and permanent material	2,896,372
51 - Works and installations	177,858
TOTAL	**10.282.705**

Prepared by the author. Source: 2019 STJ Management Report, p. 44.

It appears that the highest expense of the organ was with the payment of active personnel, which represented approximately R$ 660 million of the budget execution of 2019. The second largest expense, payment of inactive personnel, reached a little more than half of the payments with assets, with approximately R$ 347 million of the total execution of 2019. Among the discretionary expenses, the highlight amount shows the expense due to the hiring of labour, R$ 116 million, generally directed toward the payment of contracts for secretarial services, security, cleaning, etc. Understanding the context and peculiarities of the budget of the Superior Court of Justice (STJ), the research advanced to the quantitative analysis of budgetary data with the application of a statistical model of forecasting and verification of the results, detailed in the next section.

4. Methodological Procedures

The STJ's budgetary data was collected through consultations built by the authors in the *'Tesouro Gerencial'* (Treasury Management) system, which is a business intelligence platform that organizes information from SIAFI[26] and is accessed through a functional password. The data is public and therefore has no confidential restrictions.

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[26] The Integrated Financial Administration System - SIAFI is the main instrument for recording, monitoring and controlling the Federal Government's budget, financial and patrimonial execution. For more information, see:
http://www.tesouro.fazenda.gov.br/siafi;jsessionid=nI62sn3yVa10KjJulakOo1GK.1

The system consultation was structured by selecting as 'information item' the budgetary actions of primary expenses of the STJ, disregarding the actions of financial expenses, since they are not covered by the "expenditure ceiling". The month-to-month net movement for the years 2010 to 2019 of the accounts "Amounts Paid" (29241.04.03), "Processed unpaid balance paid" (29213.02.03) and "Unprocessed unpaid balance paid" was considered (29213.02.04), which were added to obtain the result of the total financial execution value of each share.

Therefore, the entire population of primary budgetary actions of the STJ was considered for the determined time lapse, totalling 120 observations for each action (12 months in 10 years).

The amounts executed for each action were added and aggregated by the primary result identifier: mandatory expenses[27] (RP 1) and discretionary expenses (RP 2)[28].

According to Ehlers (2009), a time series is a sequence of dependent variables in chronological order, also known as an example of a stochastic process. Therefore, the study of time series serves several objectives. For the scope of this work, the predictive and control aspects are highlighted.

The time series of the Superior Court of Justice's continuous budget execution showed a consistent linear trend, with a seasonal variation of 12 months for mandatory expenditures, indicating a forecast profile[29] compatible with the Holt-Winters additive method. Discretionary expenses did not show a seasonal behaviour, allowing the forecast by trend parameters, using the same method.

The Holt-Winters additive method (2004) is based on three equations with smoothing constants related to the components of the series pattern: level (α), trend (β) and seasonality (γ):

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[27] As defined in the Budget Technical Manual - 2021, of the Ministry of Economy and art. 17 of the LRF.

[28] The classification of each action in relation to the Primary Result indicator is shown in Volume III - detail table of the LOA budget credits for 2019. The expenses indicated as RP0 were not considered for the formation of the historical series because they are financial expenses, not computed for the spending limit.

[29] This was verified for the STJ time series: $\alpha = 0.13$; $\beta = 0.00$; $\gamma = 0.00$; MASE = 0.58; SMAPE = 0.05; MAE = 6,073,289.56 and RMSE = 7,230,736.90.

$$T_t = \gamma(L_t - L_t - 1) + (1 - \gamma)T_t - 1$$

$$L_t = \alpha(x_t - I_t - 12) + (1 - \alpha)(L_t - 1 + T_t - 1)$$

$$I_t = \delta(x_t - L_t) + (1 - \delta)I_t - 12$$

Where (k) represents the number of future forecasts:

$$^\wedge x_{t(k)} = L_t + kT_t + I_t - 12 + k, k = 1, 2, \ldots$$

It is important to note that the method proposes predictions based on exponentially weighted moving average calculations, so that the most recent observations gain greater weight for the forecast. That is, the characteristics of the budget execution of 2019, 2018 and 2017, the final years of the series, have a greater influence on the forecasts than the observations of 2010, 2011 and 2012, the initial years of the series. This is a crucial factor for the analysis of the forecasts, considering the implementation of the additions to the Positions and Salaries Plan and the effectiveness of the New Tax Regime in the most recent three-year period.

The adequacy of the model was proven by applying a 95% confidence interval and the forecast rule to known historical data (robustness test) in the last three years of data collected (2017-2019) and by evaluating the extent of the errors (divergences) between fact and forecast. In mandatory expenses, the difference between the amount executed and the forecast amounted to 2.86% in 2017, 0.19% in 2018 and 0.09% in 2019. In discretionary expenses, the variation in the annual sum was 1.1% in 2017, 5.97% in 2018 and 10.19% in 2019. This relationship is analysed in greater depth in the next section.

For the parameter of the individual spending limit, the projection followed the rule of the New Tax Regime updated by the IPCA[30]. Thus, the spending limit of 2020 was considered as the basis, and the percentages of the IPCA projected for the period from 2021 to 2026 were applied by the Fiscal Monitoring Report - RAF of the Independent Fiscal Institute - IFI[31].

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[30] According to ADCT art.107, §1 °, items I and II.

[31] It is worth considering that the IFI projection considers the annual accumulated IPCA (January to December), while the spending limit rule considers the accumulated from July to June.RAF, from April 13, 2020, Base scenario. Available at: < https://www12.senado.leg.br/ifi/dados/arquivos/projecoes-ifi/view>. Access on 27 apr. 2020.

The projection extended to the horizon, the year 2026, where there are defined parameters, since from the tenth exercise of the New Tax Regime, there may be a review of the parameters for updating the limits[32].

Finally, the budget execution forecasts were compared with the projections of the spending limit for each year, which could answer the questions proposed in this study. The analysis of this data is presented in the following section.

5. Results and discussions

In this section, the results obtained after the survey, data treatment and application of the Holt-Winters forecast method to the STJ historical series of payments will be reported, compared and analysed.

To facilitate understanding, the results have been divided into 3 subsections: the first presents the results for mandatory expenses; the second deals with the forecast of discretionary expenses; and the third contains the results of the previous sections with the projection of the spending limit until 2026.

5.1 Results of Mandatory Expenses

As mentioned in the previous topic, the payment of mandatory expenses by the Superior Court of Justice is characterized by an increasing linear trend, with seasonal variation every 12 months. This pattern arises mainly from the increase in execution in the months of November, December and January, from the actions of Active Personnel, Retirements and Pensions, with the payment of the instalments of the 13th salary (Christmas bonus), the Extraordinary Service (carried out during the recess, and a third for vacations (with greater demand during the school vacation period). Functional progressions and promotions, when applicable, also occur annually on the same date the employee joins the agency, making up the inert vegetative growth of personnel expenses.

In forecasting budget execution from 2020 to 2026, the statistical model identified and reproduced the same pattern, as can be seen in the following graph:

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[32] By means of a complementary law proposed by the President of the Republic, under the terms of ADCT art.108.

Graph 4 - Time series of monthly execution of the mandatory expenditure budget (2010-2019) and forecast (2020-2026)
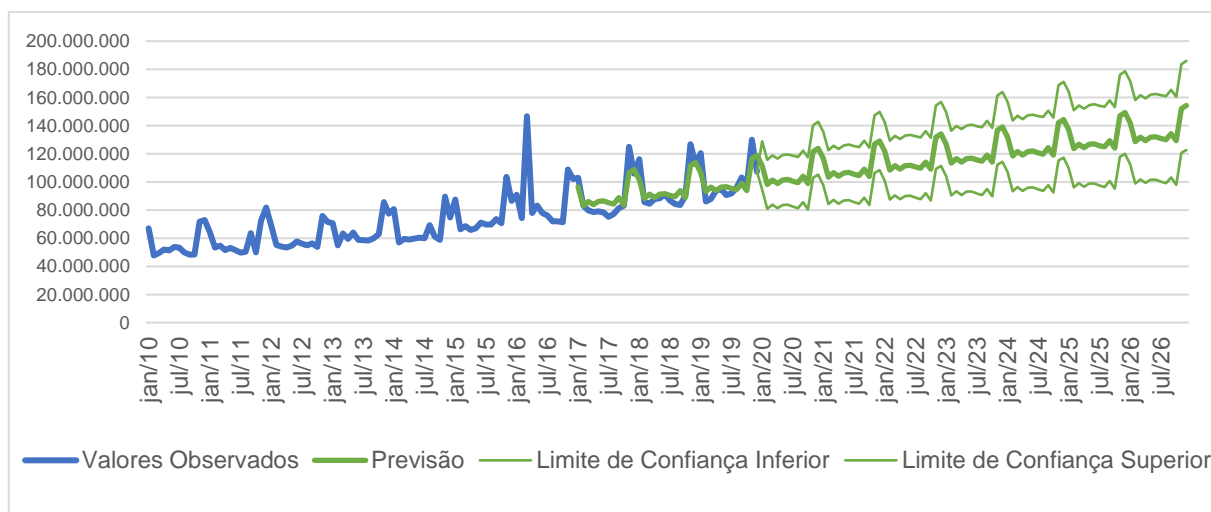
Observed Values   **Forecast**   Limit of Inferior Confidence   Limit of Superior Confidence

Source: Treasury Managerial System *'Tesouro Gerencial'* and author's calculations.

Observing the data from the historical series from 2010 to 2015, it is possible to highlight that the peaks of each year occurred in the months of November or December, with an average increase of 34% in relation to the monthly average of payments.

The striking exception occurs in 2016, with an execution 67% above the monthly average of the year, which occurred in March due to the payment of adjustment to the remuneration of civil servants, with retroactive effects[33], as already explained in section 2.

It is worth noting that in the period of the time series before the implementation of the spending ceiling, the direct influence of the variation of the amount executed, from one year to the other, with the accumulated IPCA amassed annually: from 6 years, a 3-percentage increase in the payment of mandatory expenses was higher than the IPCA (real growth) and in the other 3 years, it was lower.

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[33] Granted by administrative decision in a Plenary Session of the STJ, of March 2, 2016, as set out in Laws 10.697 / 2003 and 10.698 / 2003, which provided for remuneration aspects of federal civil servants. The Decision was suspended, immediately afterwards by the STF and effectively revoked in March 2018.

Continuing the analysis of the historical series, the period from 2017 to 2019 is of particular importance due to the beginning of the spending limit, implementation of the PCS adjustments and also the application of the robustness test of the forecast model.

The negative percentage change from 2016 to 2017 (table 4 below) results from the atypical situation that occurred in 2016, already reported. If we considered a median value for payment in March 2016, excluding the effect of the outlier, the increase in the execution of mandatory expenses in 2017 would be around 7%, followed by 8.45%, in 2018 and 5.43% in 2019.

Table 4 - Compulsory Expenses (2017 - 2019) and robustness test model

Parameter	2017		2018		2019	
	Execution	Forecast	Execution	Forecast	Execution	Forecast
Total Anual	1,049,029,467	1,079,041,957	1,137,624,497	1,139,787,584	1,199,401,305	1,200,533,210
Monthly average	87.419.122	89.920.163	94.802.041	94.982.299	99.950.109	100.044.434
Forecast / Execution Variation		2.86%		0.19%		0.09%
Change (previous year)	-0.30%		8.45%		5.43%	
Update of spending limit	7.2%		3%		4.39%	

Source: Treasury Managerial System '*Tesouro Gerencial'* author's calculations.

It is important to note that the growth of mandatory expenses, from that period from 2017 to 2019, exceeded the accumulated IPCA for each year in percentage terms, which implies that the growth was real and that the spending limit was adjusted in a lower proportion to the growth in spending mandatory,

this confirms the basic hypothesis of this research. However, this observation is accompanied by an immediate alert, that the spending ceiling for 2017 was not updated by the accumulated IPCA as previously mentioned, but by the fixed percentage of 7.2%[34], which neutralizes the impact of the growth in expenses in 2017, which occurred in an equal proportion.

Before advancing the analysis to forecast the future period, it is necessary to investigate whether there is a distortion between the actual behaviour of budgetary execution for the 2017-2019 three-year period compared to what would be expected of it were based on the past budget pattern. Thus, the Holt-Winters method was applied to data from 2010 to 2016 to predict data from 2017 to 2019, then comparing the real situation with the forecast, which allowed the study to verify the adequacy of the model. The robustness test indicated a difference of 2.86% in 2017, 0.19% in 2018 and 0.09% in 2019, demonstrating the accuracy of the forecast. It is likely that the percentage of 2017, slightly higher than the others, results from the influence of the highest level of payments verified in 2015 and 2016 on the model's variables for the forecast for the following year. The gap between forecast and execution was low in 2018 and 2019.

That said, we proceeded with the prediction's calculation of the budgetary execution of mandatory expenditures from 2020 to 2026, based on the time period from 2010 to 2019. The results obtained respected the upper and lower confidence limits (95%) and presented the growing trend, already commented on, however, was gradually found to be lower each year.

An increase is estimated of approximately R$ 61.8 million (5.16%) between 2019 and 2020 and of R$ 60.7 million (3.88%) between 2025 and 2026. The annual average addition to the budget mandatory expenses in this forecasted period, is R$ 60.9 million for each financial year. Table 5 below summarises the results obtained:

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[34] According to ADCT art.107, §1 °, items I and II.

Table 5 - Forecast of execution of the mandatory expenditure budget (2020-2026)

Parameter	2020	2021	2022	2023	2024	2025	2026
Annual Total	1.261.278.836	1.322.024.462	1.382.770.089	1.443.515.715	1.504.261.341	1.565.006.967	1.625.752.594
Monthly average	105.106.570	110.168.705	115.230.841	120.292.976	125.355.112	130.417.247	135.479.383
Change (previous year)	5,16%	4,82%	4,59%	4,39%	4,21%	4,04%	3,88%
Projected IPCA	2,54%	3,25%	3,41%	3,50%	3,50%	3,50%	3,50%

Source: IFI[35] and author's calculations.

It is important to see that, in all years, the expenditure forecast evolves at a higher level than the projected IPCA. This again demonstrated the trajectory of the real expansion of mandatory expenses beyond the spending limit adjustment index and, consequently, the possible advance on the spending margin of the other shares. In this context, the following subsection is dedicated to exploring the results of the forecast for discretionary expenses.

5.2 Discretionary Expenses Results

Discretionary expenses are, in general, dedicated toward maintaining the functioning of ta government agency with inputs from computers, communication, training, engineering, security, among others that vary according to demand, the availability of financial resources and the priorities of the Administration.

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[35] It is worth considering that the IFI projection considers the annual accumulated IPCA (January to December), while the spending limit rule considers the accumulated from July to June.RAF, of April 13, 2020, Base scenario. Available at: <https://www12.senado.leg.br/ifi/dados/arquivos/projecoes-ifi/view>. Accessed on 27 apr. 2020.

Thus, unlike mandatory expenses which were analysed in the previous subsection, discretionary expenses do not show a standard seasonal behaviour. On the other hand, they showed a general increasing trend in the historical series from 2010 to 2019. For the forecast of budgetary execution from 2020 to 2026, the statistical model identified and reproduced the central trend of execution of these expenditures, illustrated in the graph below:

Graph 6 - Time series of monthly execution of the discretionary expenditure budget (2010-2019) and forecast (2020-2026)
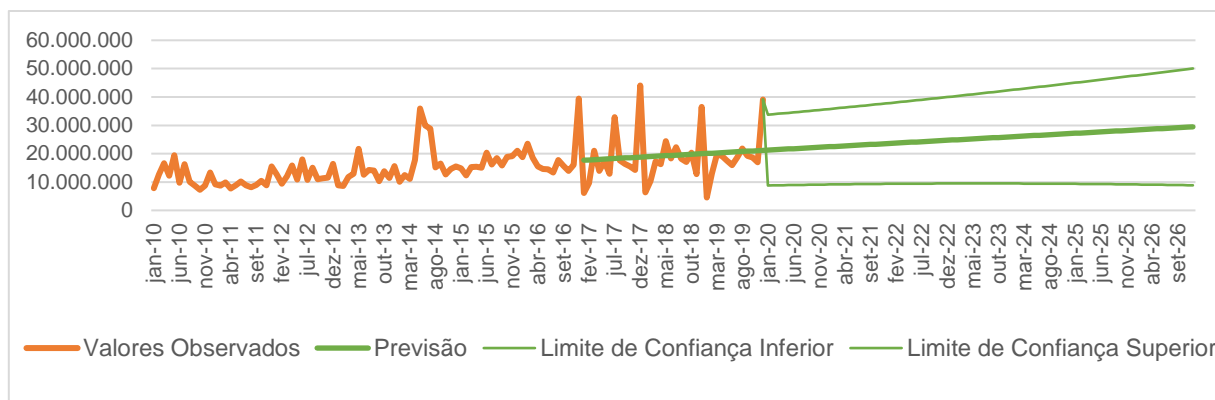
Observed Values   **Forecast**   Limit of Inferior Confidence   Limit of Superior Confidence

Source: Treasury Managerial System *'Tesouro Gerencial'* and author's calculations.

As already mentioned, the seasonal criteria do not apply to this type of expenditure, making the analysis of peaks and troughs in the monthly graph innocuous.

It is relevant to note the discrepancy in the percentage variation in the execution of discretionary expenses: between 2010 and 2011 the variation was -19.65% and between 2013 and 2014 it registered an increase of 41.71%. Nominal values alternate between growth, maintenance and retraction, from one year to the next, without maintaining any relation or proportion with the calculated IPCA.

This framework is transformed for the period from 2017 to 2019. During this time, the rules of the New Tax Regime were in force and the implementation of adjustments to the Positions and Salaries Plan for mandatory expenses, the average execution of the three-year period stands at the level of 2016, in nominal terms, with total annual payments of around R$ 222 million.

Should inflation be considered, it can be seen that the variation of -1.5%, in 2017, -0.61%, in 2018 and 2.03%, in 2019 (see table 7 below), falls short of the IPCA accumulated in each year (from January to December) and also the percentage for updating the spending ceiling. In other words, in real terms, the execution of discretionary expenses decreased.

This change in the level of the growth trend could be seen in the robustness test of the forecasting model, calculated along the same lines already described in the previous subsection. In the comparison between the result of the forecast and the execution, there was a growing divergence of -1.1% in 2017, 5.97% in 2018 and 10.19% in 2019, that is, in 2018 and 2019 the payment of discretionary expenses is significantly out of step with its general historical growth[36] trend, as shown in the following table:

Table 7 - Discretionary Expenses (2017 - 2019) and robustness test model

Parameter	2017		2018		2019	
	Execution	Forecast	Execution	Forecast	Execution	Forecast
Annual Total	221,498,757	219,056,698	220,139,283	233,277,335	224,601,053	247,497,971
Monthly average	18,458,230	18,254,725	18,344,940	19,439,778	18,716,754	20,624,831
Forecast / Execution Variation		-1.10%		5.97%		10.19%
Change (previous year)	-0.05%		-0.61%		2.03%	
Update of spending limit	7.2%		3%		4.39%	

Source: Treasury Managerial System *'Tesouro Gerencial'* and author's calculations.

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[36] This difference stems from the change in the STJ's spending profile, which reduced the execution of discretionary expenses due to the Expenditure Cap. This analysis is detailed in the next subsection.

Maintaining the same procedure adopted for mandatory expenditures, the application of the model for forecasting the budgetary execution of discretionary expenditures for the period 2020 to 2026 was continued, based on the time series from 2010 to 2019.

The results showed a relevance with the upper and lower confidence limits (95%) and maintained the growing trend, already mentioned, however, gradually lower each year. Even so, the extent of the annual variations, verified in the forecasts, average of 4.82%, disregarding 2020, was greater than that observed, in fact, in the triennium from 2017 to 2019, it was on average 0.45%.

The year 2020 was removed from the calculation of the average, since its inclusion would be overestimated, considering the variation of 16.53% between the total executed in 2019 and the total forecast for 2020. This variation remained distorted, because it compared a real data (execution of discretionary expenses in 2019), whose behaviour was different from the general historical trend, with a forecast data (payments for 2020) that considered the general trend of the historical series started in 2010. Table 8, below, shows the difference annual variations in the forecast for execution and presents the annual compilation of calculated future results:

Table 8 - Forecasting the execution of the discretionary expenditure budget (2020-2026)

Parameter	2020	2021	2022	2023	2024	2025	2026
Annual Total	261,718,608	275,939,244	290,159,881	304,380,517	318,601,154	332,821,790	347,042,427
Monthly Average	21,809,884	22,994,937	24,179,990	25,365,043	26,550,096	27,735,149	28,920,202
Variation (previous year)	16.53%	5.43%	5.15%	4.90%	4.67%	4.46%	4.27%
Projected IPCA	2.54%	3.25%	3.41%	3.50%	3.50%	3.50%	3.50%

Source: Treasury Managerial System *'Tesouro Gerencial'* and author's calculations.

In absolute terms, the model predicts that non-mandatory payments will grow by R$ 14.2 million per year and this increase would represent 5.43% of total discretionary payments in 2020, decreasing up to 4.27% in 2026. As in mandatory expenses, the forecast for an increase in discretionary rates evolves at a higher level than the projected IPCA, in all years.

Without the need for further detail, the fact is that, if mandatory expenses tend to grow above the IPCA, a factor for correcting the spending limit, and also the discretionary ones, at some point this account will not close, unless the budget surplus STJ supports this growth year by year, or that the execution undergoes a significant change in relation to its seasonal trend. The comparison between execution and forecast in the period from 2017 to 2019 has already signalled this change in behaviour.

This said, the next subsection is dedicated to investigating the confrontation between the execution forecasts presented and the projection of the spending ceiling for the STJ.

5.3. Budget execution forecast versus projected spending limit

After analysing the application of the forecast method, and the separate behaviour of mandatory and discretionary expenses, this section is dedicated to studying the interaction of these variables in opposition to the spending limit and to answer the motivating question of this study - Will the persistent growth in mandatory expenditures restrict discretionary expenditures to critical levels, even with the possibility of exceeding the limit of the STJ's spending ceiling?

Until the financial year of 2026, the New Tax Regime established that the individual spending limit be adjusted annually by the Broad National Consumer Price Index - IPCA[37]. Thus, we started with the spending limit of 2020, which was already known at this point in the research, and the IPCA percentages projected for the period from 2021 to 2026 were applied:

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[37] According to ADCT art.107, §1 °, items I and II.

Table 9 -STJ Projection of Spending Limit for 2021-2026

Variable	2020²	2021	2022	2023	2024	2025	2026
IPCA - accum. (% in the year) ¹	2,54%	3,25%	3,41%	3,50%	3,50%	3,50%	3,50%
Projection of Expenditure Limit – STJ	1.517.813.015	1.556.418.156	1.606.943.592	1.661.797.986	1.719.919.256	1.780.116.430	1.842.420.505

Source: IFI[38] and author's calculations.

Note: ¹ IPCA projection of the April 2020 RAF Report from IFI, base scenario[39]. ²2020 ceiling = R $ 1,515,334,744 (initial ceiling LOA 2020) + R $ 2,478,271 (Expansion by decision of TCU[40])

According to the projection, the limit of primary payments of the STJ would increase, on average, R$ 54.1 million per year, starting from R$ 1,556 million in 2021, and reaching R$ 1,842 million in 2026, representing the projection of the ceiling of expenses and all research variables are known and quantified.

Annually, the Budget Guidelines Law (*Lei de Diretrizes Orçamentárias*) guides authorities in the preparation of the annual budget, giving priority to meeting mandatory expenses within the scope of the primary expenditure limit[41]. Consequently, the budget balance resulting from the difference between the allocation of primary and mandatory expenditures is used to finance discretionary actions.

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[38] It is worth considering that the IFI projection considers the annual accumulated IPCA (January to December), while the spending limit rule considers the accumulated from July to June.RAF, of April 13, 2020, Base scenario. Available at: <https://www12.senado.leg.br/ifi/dados/arquivos/projecoes-ifi/view>. Accessed on 27 apr. 2020.

[39]   In view of the fact that it is an economic index projection, susceptible to many interference variables, this difference is considered negligible for the purpose of this study.

[40] Decision issued by the Federal Audit Court in TC 040.306 / 2019-4 (Judgment No. 362, 2020) and the incorporation of its effects in the Primary Income and Expenses Evaluation Report of the 1st Quarter of 2020 recognizing that the calculation of the limit defined by Constitutional Amendment no. 95/2016 was hampered by defects in Provisional Measure no. 711/2016, entitled to an increase of R $ 2,478,271 in the STJ's individual spending limit.

[41] Like the PLDO 2021, art. 4th and art.17, item I.

In this dynamic, it appears that the primary spending limit and the forecast of mandatory primary payments are independent variables, while the amount allocated to discretionary demands appears as an adjustment variable, as shown in table 10 and graph 5, below:

Table 10 - Projection of the Spending Limit x Forecast of Mandatory Expenses x Balance for STJ Discretionary Expenses (2020-2026)

	2020	2021	2022	2023	2024	2025	2026
ending Limit - STJ (Projection) (A)	1.517.813.015	1.556.418.156	1.606.943.592	1.661.797.986	1.719.919.256	1.780.116.430	1.842.420.505
Mandatory Expenses (Forecast) (B))	1.261.278.836	1.322.024.462	1.382.770.089	1.443.515.715	1.504.261.341	1.565.006.967	1.625.752.594
Discretionary Expenses (balance) (A-B))	256.534.179	234.393.694	224.173.504	218.282.271	215.657.915	215.109.463	216.667.912

Source: Prepared by the author.

Graph 5 - Time Series of Primary Budget Execution of the STJ (2010-2019), Projection of the Limit of Expenses, Forecast of Mandatory Expenses and Balance for Discretionary Expenses (2020-2026)
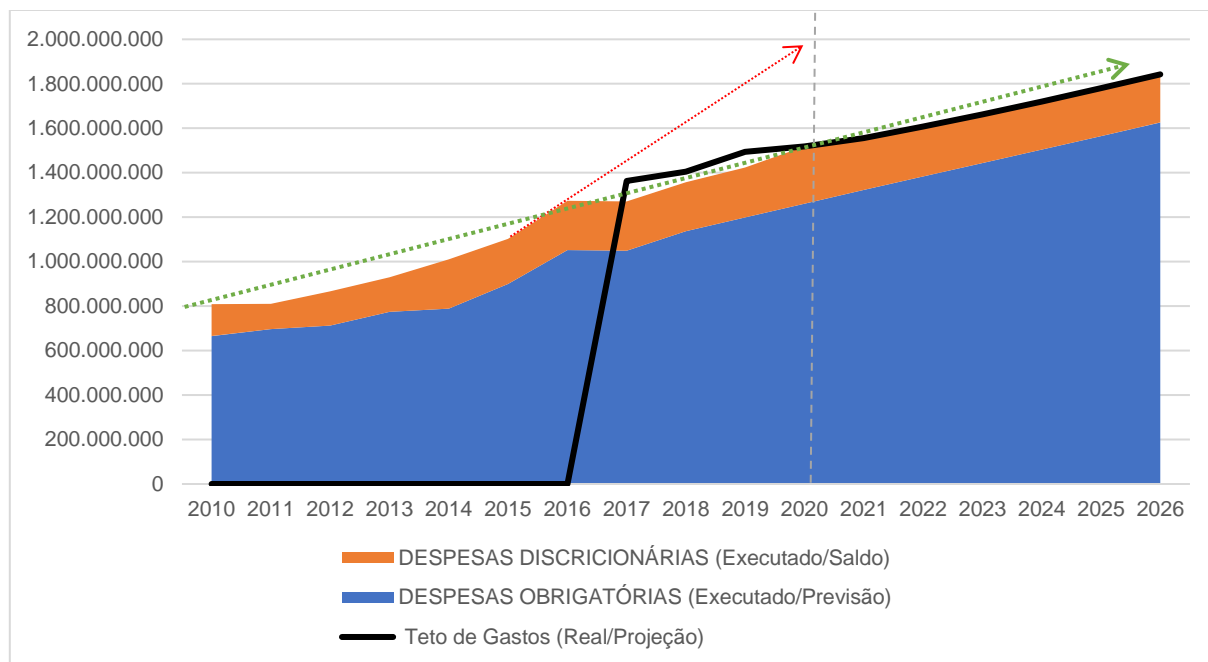
Discretionary Expenses   **Mandatory Expenses**   **Spending ceiling**

Source: Management Treasury (nominal values from 2010 to 2019) and author's calculations.

The data in table 10 above, can be seen by the vertical dotted line, which marks the beginning of the forecasts. Before the line, the entire historical series presented during the previous sections of this research is illustrated.

The great contribution of this data is to inform, with the greatest possible statistical precision, the values that the STJ will have to plan[42] its non-mandatory demands, even when the current regulatory scenario allows foreseeability, that is, until the year 2026.

It is worth remembering that the forecast amount for the payment of mandatory expenses in 2019 was 99.91% accurate with the final amount executed. Bearing in mind that the values of discretionary expenses presented in Table 7 are the balance of these forecasts (dependent variable), the accuracy

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[42] The data was calculated in monthly values and compiled in annual results, to facilitate visualization and analysis.

observed in the test of robustness of mandatory expenses (Table 4) therefore permeates the results for discretionary expenses (Table 10).

That said, a year-by-year decrease is expected in the amounts allocated to discretionary expenses, which start with R$ 256.5 million in 2020, and suffer reductions of -R$ 22.1 million, for 2021; -R$ 10.2 million for 2022; -R$ 5.8 million for 2023; -R$ 2.6 million for 2024; -R$ 548 thousand for 2025; and, finally, a positive variation of R$ 1.5 million for 2026, ending the period with the amount of R$ 216.6 million in 2026, which implies a total negative variation in the period of R$ 39.8 million . It is worth remembering that such a decrease is a consequence of the existence of the spending ceiling and the growth forecast, above the IPCA, of the mandatory expenses, previously mentioned.

At this point, part of the motivating hypothesis of this research is quantified and proves to be valid regarding the persistent growth of mandatory expenses to restrict discretionary expenses.

It is interesting to see how graph 5 briefly portrays the outlook presented during this study:

• the increase in the growth of primary expenses, underlined between 2014 and 2015 by the red dotted arrow. In a simplified but very illustrative reading, this is the level of expenses that the STJ could achieve, if the inclination verified before the adoption of restrictive measures was maintained.

• the green dotted arrow indicates that the measures already adopted managed to re-establish the pre-crisis growth trend (2011-2012) until around 2026, which is when the window to review the parameters for adjusting the spending limit will open.

• The peaks and troughs seen from 2015 to 2019 depict the execution effort in 2016 and the savings measures of the following years. As well as this, the total of the STJ limit above the LOA in 2017 and the post-NRF are probable causes for the empty space between the colored band of the total paid and the black line of the expenditure ceiling.

Regarding the last topic, it is important to mention that the limit value available for primary expenses, however, that were not executed was approximately R$ 92.8 million, in 2017; R$ 46.5 million

in 2018; and R$ 69.9 million in 2019 (the only year in which there was a one-off increase, by compensation, of R $ 27.9 million from the Executive Branch). Discounting the said compensation, the balance of the limit would be R$ 41.9 million in 2019. It can be seen, therefore, that the difference between the ceiling and expenses has already been reduced to less than half in three years.

And how long will it last? The question instantly arises when referring to the research hypothesis as to the possibility that the persistent growth of mandatory expenses will suffocate discretionary ones to the point of exceeding the spending limit, if there is no flexibility.

As already noted in table 10, the remaining balance forecast for discretionary expenses ranges from R$ 256.5 million in 2020 to R$ 216.6 million in 2026. As previously determined, the total average paid for this category of expense, from 2017 to 2019, was R$ 222 million. If this pattern of execution is maintained, the forecast of resources would serve the government agency, under the same current conditions, until 2024, and with a reduction of around 3% in the amount of discretionary, in 2025 and 2026.

Of the budget amount allocated to discretionary actions, a significant majority is linked to ongoing expenses for maintaining the court's activities, signed by contractual instruments. Currently, contract payments represent around R$ 206 to 212 million, that is, amounts that can be met by the balance allocated to discretionary expenses.

In view of the above, it seems reasonable to state that the trend towards an increase in mandatory expenditures will not inflict a reduction in discretionary resources to critical levels in the STJ, nor will it disregard the spending limitation set by EC 95/2016.

However one cannot ignore the calculations and analyses performed here, applying the statistical method of forecasting over the time the series of discretionary expenses as an independent variable. In this perspective, the forecast is capable of reflecting trends in the allocation of resources based on the decision-making power of public managers in the face of society's demands over time.

That said, table 11 compares the results obtained by discretionary expenses as an adjustment variable (balance), against its forecast as an independent variable until 2026:

Table 11 - Discretionary Expenses: adjustment variable x independent variable (2020-2026)

| Variable	2020	2021	2022	2023	2024	2025	2026
Discretionary (Balance) (A)	256,534,179	234,393,694	224,173,504	218,282,271	215,657,915	215,109,463	216,667,912
Discretionary (Projection) (B)	261,718,608	275,939,244	290,159,881	304,380,517	318,601,154	332,821,790	347,042,427
Difference (C) = (A-B)	-5,184,429	-41,545,551	-65,986,377	-86,098,246	-102,943,239	-117,712,328	-130,374,515
Difference Proportion (D%) = (C/B)	-2%	-15%	-23%	-28%	-32%	-35%	-38%

Source: author's calculations

It can be seen, by the independent forecast of execution of discretionary expenses (line B), the growing trend of, on average, 4.8% per year in the period, whereas, due to the adjustment bias for discretionary expenses (line A) the trend is decreasing, with an average annual decline of 2.7% for the same period.

The difference between the two calculation parameters for the discretionary expenditure limit (line C), as well as the proportion of this divergence in relation to the total to be considered (line D), quantify the effort of saving that the primary expenditure ceiling imposes on the behavior discretionary spending of the STJ for the next seven years. It should be noted that this difference already considers the change in the payment profile that occurred during the NRF's triennium inauguration, as demonstrated in the robustness test of the model tested here.

Even so, the data indicates the need for persistent economic efforts so that the trend measured in the historical series is in line with the new reality throughout the coming period. This alignment can be illustrated, using graph 6 below, as the displacement of the yellow dotted arrow (trend of forecasting discretionary expenses) towards the green dotted arrow (trend of adjustment to the spending ceiling):

Graph 6 - Time Series of Primary Budget Execution of the STJ (2010-2019), Projection of the Limit of Expenses, Forecast of Mandatory Expenses and Discretionary Expenses (2020-2026).
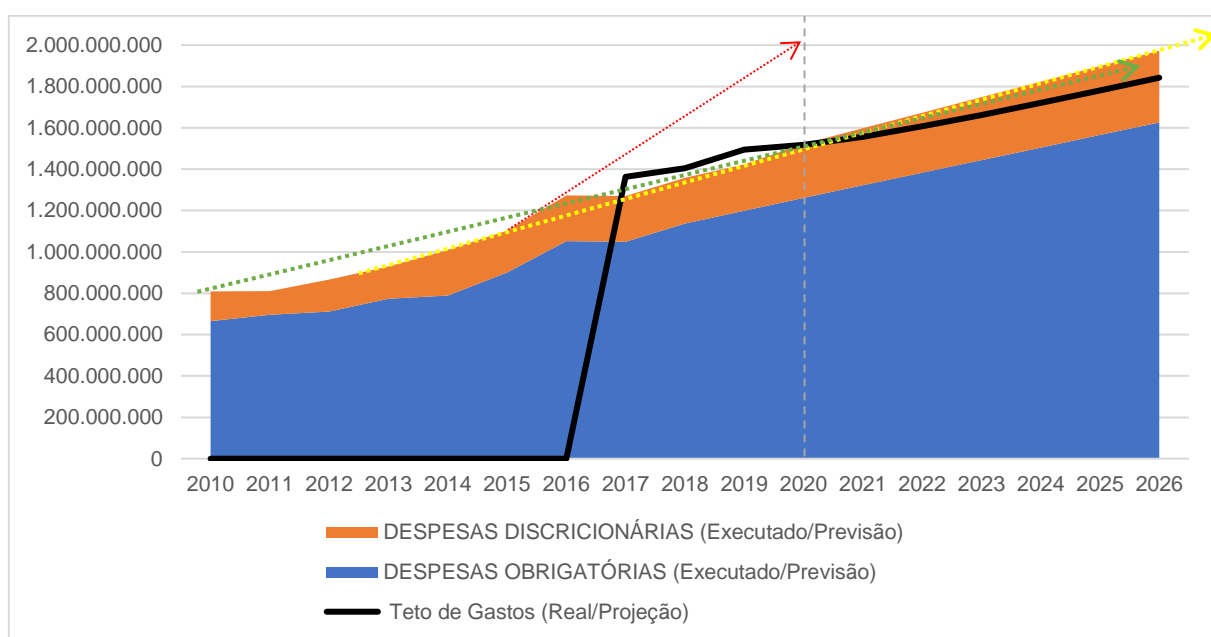
Discretionary Expenses   **Mandatory Expenses**   **Spending ceiling**

Source: Management Treasury (nominal values from 2010 to 2019) and author's calculations.

Regarding the data from 2010 to 2020 (vertical dotted line), the graph is identical to graph 5. For the future interval, the discretionary expenditure data, as an adjustment variable, were replaced (however, the green trend line was maintained) for the forecast extracted from the time series of discretionary primary payments (including the respective yellow trend line).

It is interesting to observe, in a simplified graphic reading, that the green dotted line maintains the trend of spending growth observed in the STJ in the pre-crisis period (2011-2012). The yellow dotted line, on the other hand, follows an increase in the slope of expenditure in the initial period of the crisis

(2013-2014). Finally, the red dashed line accompanied the deepening of the crisis (2015-2016)[43]. Having overcome the red alert line, the current trend (yellow line) is one of alert, with a conscious and possible effort to resume and move forward on the green line.

The state of alert is real, as shown in Figure 6, with the forecast of breaking the spending ceiling in December 2020, if the STJ had not adopted measures to control expenses. This condition corroborates the original concern of the research hypothesis, however, its adjustment to the patterns of the spending ceiling proved to be viable and in full course of application.

Thus, there is no sign of the STJ's disregard for spending limits, nor the possibility of activating the predicted reframing triggers provided for in art. 109 of EC no. 95/2016. However, it is right to stress that the control of discretionary expenses must be stricter each year, always bearing in mind that mandatory expenses and the amount of spending limits are variables that do not depend on the organ's direct management, that is, these two variables have a higher degree of exogeneity.

6. Research Conclusions

The objective of this study was to analyse the impacts of the implementation of the New Federal Tax Regime, put in place in 2016, on the budget of the Superior Court of Justice, through the forecast of the mandatory and discretionary expenses of the agency based on a historical series of budget execution.

The forecast calculations of mandatory and discretionary expenses were compared with the projection of the spending limit in the period 2020 to 2026. It was found that mandatory expenses already showed real growth from 2017 to 2019, the period of implementation of the New Tax Regime and the readjustment of the Employees' Job and Salary Plan. The upward trend above the IPCA was maintained for the budget execution forecast period with an average increase of R$ 60.9 million (4.4%) per year for mandatory expenses and R$ 14.2 million (4.7%) for discretionary expenses. This means that there would be, on average, R$ 75.1 million of annual increase for the period, while the balance of the spending limit at the end of each financial year has been reduced, resulting in the amount of R$ 41.9 million in 2019 (discounting the Executive Branch compensation, which ended that same year).

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[43] The aforementioned periods of the political-economic crisis were contextualized in section 1 of this study.

This situation proved to be unsustainable with the impending disregard for the spending limit as early as December 2020, confirming the original concern of the research hypothesis. In this scenario of a retrenchment of expenses, the STJ management made savings efforts by reducing contracts on demand and outsourced services; negotiation of percentages of contractual readjustments and renegotiations, energy savings by restricting the court's opening hours internally; postponement of planned investments among other measures.

In general, the data revealed that the control measures adopted by the STJ had an effect and the discretionary payments of 2018 and 2019 significantly differed from their general historical growth trend and, since 2016, they have been maintained at an approximate level of R$ 222 million budget execution for this type of expenditure. This average of discretionary expenditures would serve the Agency, under the same current conditions, until 2024, and with a reduction of around 3%, in 2025 and 2026.

In view of the above, it is possible to affirm that the STJ's budget was adequate for the full implementation of the adjustment of the Positions and Salaries Plan, regardless of the compensation of limits of the Executive Branch (in an amount lower than the unused limit in 2019, the only year the agency received compensation). As for discretionary expenses, they were adjusted over the years 2017 to 2019 and should remain in an average annual cumulative saving effort of R$ 20.8 million until 2026, with this compression being assessed as financially viable.

The mentioned economy effort can have two origins: the first, operationally viable, through the rationalization of expenses, optimization of resources and efficiency measures that do not affect the quality and timeliness of the provision of jurisdictional services; and the second, as a result only of the initial slack in the spending ceiling and repressed demands that at some point may become unsustainable. To define the origin of the STJ's economic effort, the message of the Minister President in the Agency's Management Report is highlighted:

> "(...) in 2019, once again, we were able to increase our productivity of judges by 4%, which means approximately 20 thousand more cases than in 2018. Even having received 11% more cases than last year, again we achieved a record reduction in the number of cases, 543,381 cases judged in 2019 (...)
>
> "We hope to achieve even more in this last year of our STJ 2020 Plan with the proposal to continue investing in the modernization of the STJ, focusing on the adoption of new

technological solutions, restructuring of strategic sectors and training of civil servants".
(Management Report of the Superior Court of Justice 2019, message from the President, 5 - 6)

We see here in the conclusion of the cited passage, by the overview of the referred Report and by the study developed in this work, the rationalization of expenses associated with management measures will enable the Superior Court of Justice to continue performing the judicial provision in an efficient and satisfactory manner, without infringing the New Tax Regime.

Finally, bearing in mind that the proposed study has peculiarities regarding the contemporary, complexity and breadth of the theme, it is worth considering the need for monitoring and periodic updates on this theme when considering new impacting factors. It is not yet possible to assess the impacts of the Draft Amendment to Constitution no. 186 and 188 of 2019 (Emergency PEC and PEC of the Federative Pact), under debate in the National Congress, and the Coronavirus pandemic in Brazil, but there is a potential for interference in the forecasts presented.

In view of the above, it is urgent that the budget forecasting work developed here be constantly updated. The concept of forecasting already carries with it the possibility of error. For this reason, the predictions are not expected to be perfect, but rather, consistent and transparent in relation to the methodology adopted. In this way, this work can continue to develop when adjusting it to the new variables and, therefore, generate relevant quantitative information capable of guiding decisions on resource allocation and planning within the Superior Court of Justice.

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