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Impact of personnel management measures on personnel expenditure"

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Summary

Using social security and RAIS data, we simulated the impact of personnel management measures on the compensation expenditures of active public servants (2022-2031) in the federal and state governments. Differently from Cavalcanti et al. (2020), we based ourselves on career entry cohorts. PEC 32/2020, known as Administrative Reform, serves as motivation for this exercise, even though the results do not correspond to the fiscal impact of the PEC taken in isolation. The measures analyzed here will perhaps only be implemented in the future, through legislative proposals of an infra-constitutional nature. The results indicate that spending would be stable in the baseline scenario (that is, without the adoption of the measures). The savings would be small in the short term, but could reach an accumulated R$ 128 billion over 10 years, divided between R$ 57 billion (Federal Government) and R$ 71 billion (states). As an additional contribution, we evaluated the sensitivity of these estimates to different parameters of the public servants' work cycle.

Keywords: personnel expenditures; active public servants; Federal Government; states.

JEL Classification: H68, H72, J45

SUMÁRIO

I - Introduction

The objective of this work is to contribute to the debate about possible changes in the rules for remuneration and replacement of active civilian public servants in the Federal Government and in the states.[1] The measures analyzed are (i) career lengthening, i.e., increasing the time required for promotions and progressions; (ii) reduction of the starting salary of careers; (iii) reduction in the rate of quantitative replacement, i.e., of servants who retire or die; and (iv) temporary suspension of career progressions and promotions, in the event of triggering additional measures of expenditure containment. In the simulation, only new servants are subject to measures (i) to (iii), but all active servants are subject to measure (iv).

The adoption of people management measures in the public sector was brought back to the table in September 2020, when the Executive Branch sent Proposal for Amendment to the Constitution 32/2020[2] to the National Congress. Since then, the administrative reform, of which PEC 32 would represent the first stage[3] has been presented as one of the possible initiatives to ensure a sustainable path for public finances. In 2021, in the Presidential Message to the National Congress,[4] the Executive Branch again presented the reform as part of a broader fiscal consolidation effort. [5]

The measures with the greatest potential to contain spending, however, depend on infra-constitutional regulation. According to the amendment of the PEC, it "changes provisions on public servants, public servants and administrative organization. Only in the future more specific measures such as changes in careers and remuneration will be submitted to the Legislative, constituting additional stages of reform.[6] Thus, we emphasize that the simulations in this work will not deal with the changes suggested by PEC 32/2020 itself. Our goal was to simulate the fiscal impact of measures that will possibly be presented only later. For more legal details about PEC 32/2020, including a comparative table of the intended legal changes, see the descriptive note and the comparative table prepared by the Legislative Consulting Office of the House of Representatives.[7]

In this paper, the measures mentioned - (i) lengthening careers, (ii) reduction of the starting salary, and (iii) reduction of the replacement rate - are analyzed individually and combined among

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1   In the case of the Federal Government, law 8.112/1990 institutes the Unified Legal Regime, that is, the bond of the so-called federal statutory public servants. The law is available at: http://www.planalto.gov.br/ccivil_03/Leis/L8112cons.htm

2   The proceedings of PEC 32/2020 can be followed at the following page of the House of Representatives: https://www.camara.leg.br/proposicoesWeb/fichadetramitacao?idProposicao=2262083

3   As explained in the government portal dedicated to administrative reform, "The PEC is the first stage of a broad set of measures". Available at: https://www.gov.br/economia/pt-br/assuntos/noticias/2020/setembro/governo-apresenta-pec-da-nova--administracao-publica-1

4   https://www.gov.br/planalto/pt-br/mensagempresidencial/2021/politica-economica.pdf/view

5   Page 17 of the Message.

6   As explained in the official portal of the administrative reform, "From the approval of the PEC, bills will be needed to regulate the constitutional provisions and ensure this transformation." Available at: https://www.gov.br/economia/pt-br/acesso-a-informacao/acoes-e-programas/reforma-administrativa. See also the official presentation on the reform, in which the proposed legal changes are grouped into three phases:
https://www.gov.br/economia/pt-br/centrais-de-conteudo/apresentacoes/2020/setembro/nova-administracao-publica.pdf#page=18

7   Available at: https://bit.ly/3bn53X8 (descriptive note) and https://bit.ly/30jCVht (comparative table).

themselves, composing seven possible administrative reform scenarios. Complementarily, we verify what would be the impact of a measure of (iv) temporary suspension of promotions and promotions of civil servants in their careers. The suspension would hypothetically be activated for two years, as an extraordinary measure to contain expenditures. In all scenarios under measures (i) to (iii), only new servants are subject to the changes. In the scenarios that consider measure (iv), all active public servants are subject to it. Henceforth, measures (i) to (iii) will be indicated by the acronym RA (administrative reform), and measure (iv) by the acronym SPP (suspension of progressions and promotions). The context will make clear which RA measures are considered in each section.

The results indicate that the expenditure with assets would be stable in the baseline scenario (i.e., without adopting RA and SPP measures), except between 2022 and 2027, when there would be a real fall in expenditures due to the hypothesis of no inflationary wage replacement. The savings from RA measures would be relatively small in the short term but would grow exponentially, reaching an accumulated R$ 128 billion over 10 years (in 2031), divided between R$ 57 billion for the Federal Government and R$ 71 billion for the states. The savings generated by SPP, taken in isolation, and triggered exclusively in 2025 and 2026 would be R$ 43.2 billion by 2031 (despite being in effect for only two years, it would have a prolonged effect). Of this amount, the federal government would be responsible for R$ 21.8 billion, and the states would be responsible for R$ 21.3 billion.

The savings calculated in this study should be understood as a lower cap, since the measures analyzed may also be implemented on non-statutory agents.

We emphasize that this study does not evaluate the merits of the administrative aspect of the measures, i.e., the effectiveness of the measures in achieving increased efficiency and quality of public services. Given that the measures have a broad impact on the organization of public administration, they require multidimensional analysis, taking into account several other aspects besides the fiscal aspect, the focus of this work. Note that a sharp reduction in the replacement rate must take into account a possible increase in demand for public services in the coming years, triggered, for example, by the Covid-19 pandemic and its economic and social consequences.

Next, we will present the simulation methodology (section II), the main results (section III), the sensitivity analysis of the estimates (section IV), and the conclusion (section V). Several complementary results, such as the estimates by state and reform scenario are available in the appendix.

II – Methodology

The simulation is performed from three main variables: (i) time in career; (ii) average compensation per career time, calculated for the database year; and (iii) age.

The calculations use an aggregate approach, unlike microsimulations, which are done on an individual basis. Table 1 illustrates the procedure. In summary, for each year between 2022 and 2031, we simulate the number of civil servants (column A) and the average pay (column B) in each group of civil servants with the same length of career - that is, in each career entry cohort. The annual expenditure is equal to the sum of the expenditures with each cohort (sum of the rows in column C). In the hypothetical example in Table 1, the expenditure for the year would be R$ 950 million.

TABLE 1. ILLUSTRATION OF THE SIMULATION METHODOLOGY FOR A SPECIFIC YEAR (HYPOTHE-

Career time cohort (years since entry)	Quantitative (persons) [A]	Average remuneration (R$) [B]	Expenditure (R$ million) [C = A × B]
0	11.000	7.000	77
…	…	…	…
10	20.000	11.000	220
…	…	…	…
20	9.000	15.000	135
…	…	…	…
30	8000	17.000	136
…	…	…	…
40	8000	17.000	136
Total	56.000		950

Author's elaboration.

For purposes of public debate, the advantage of having calculations based on different metho-dologies is that, if the estimates are relatively close, there is less uncertainty about the actual fiscal im-pact that career restructuring measures may cause. Since it is impossible to calculate the exact impact, our goal is to ascertain the magnitudes involved in an eventual reform of personnel management, understanding, of course, that any aggregate analysis necessarily disregards more specific aspects of the labor cycle.

The new RA rules take effect from 2022 in this simulation, and the savings are calculated until 2031, completing ten years of the new rules. The years prior to the current one, i.e., 2018 to 2020, were simulated as well, as the year of data observation is 2018. Since such years have already been realized, they were used to calibrate the simulation (see section "II.4 Calibration").

We did not consider the impact that the new personnel measures will have, for example, on the value of the social security benefit to which the new servants will be entitled. We also did not analyze the fact that these public servants will contribute less to the specific social security regimes to which they will be linked. Therefore, the impact of the measures on the future of the welfare policies was not evaluated. We also did not evaluate the fiscal impact related to income tax revenues, since the focus of this study is on expenditures.

II.1 – Data

Two data sources were used. For the Federal Government, the data are from the Special Se-cretariat of Social Security and Labor, of the Ministry of Finance (this base will be indicated by the acronym SPREV). The observations are from 2018.

The remuneration data in the SPREV base refer to the contribution salary to the RPPS, accor-

ding to the documentation that accompanies the base.[8] In principle, this fact would pose a problem in the case of public servants who joined the complementary pension plan regime. The calculation base of the contribution of such servants to the RPPS has a legally established upper limit, which is the cap of the General Social Security System, so that, in the statistical terminology, the remuneration variable would be "censored from above". However, for some reason, the remuneration variable of the individuals who joined the complementary regime did not present this upper limit. The median is higher than the RGPS cap (which, in 2018, was R$ 5,839.45), and the maximum is over R$ 30,000.

As a further checking stage, we verified that 20.2% of the observations opted for the complementary pension plan. As expected, due to the social security legislation, the more recent entry cohorts present a higher adhesion rate. Even so, only the groups with up to six years of public service present an adhesion percentage above 1%. Among these groups, the highest percentage is 5% and occurs among servants with four years of public service. In any case, we checked whether the results of our simulation would change if, instead of multiplying the monthly remuneration by 13.3 (considering 12 months, plus Christmas bonus and one-third vacation), we multiplied by 15, for example. The simulated savings changed only slightly, thus maintaining the conclusions of the study.

Lopez and Mendes (2021) show, using data from the Ministry of Finance's Integrated System of Personnel Administration (SIAPE/ME),[9] that the average net remuneration in the Executive Branch, considering all active civil servants under the Staff Regulations (and not just entry-level civil servants) was R$ 7,600 in 2020.[10] For comparison purposes, in our base, the average salary of all servants is R$ 10,770. The figures differ for a few reasons: (a) our base includes all Powers and, as is known (Lopez and Guedes, 2019),[11] the remuneration in the other Powers tends to be higher than in the Executive; (ii) in our base, the remuneration is not net, since it represents the calculation basis of the social security contribution.

For the states, the 2018 "State Servants Panel 2014-2018", a treated version of the Annual Social Information Report (RAIS) database, was used. The data were treated by Ipea researchers,[12] for the correction of inconsistencies.[13] The panel served as the basis for Santos et al. (2020), a [14]study with projections for salaries and fixed advantages in the states.

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8   In the "Layout of Registration Data", the variable "RemuneracaoContribuicao" is defined as "Current remuneration upon which the contributions to RPPS are levied (only inform the base for calculating the server's contribution, do not inform gross remuneration nor indemnity parcels or others upon which contributions are not levied). If the servant opted for including transitory sums, resulting from a work place or position in commission in the calculation basis, under the terms of Law # 10887/2004, he must include them in the contribution remuneration value. If the employee is subject to the Complementary Social Security, inform the value up to the RGPS cap. "(our emphasis)

9   You can check several descriptive statistics of SIAPE data in the Personnel Statistics Panel (PEP - https://bit.ly/3ATh-7sO). Other data on public servants can also be found in the Brazilian State Atlas (https://www.ipea.gov.br/atlasestado/).

10   Page 8 of Lopez and Mendes (2021).

11   See Chart 22A, and its variations 22B and 22C, interactively released in the electronic document.

12   The work was awarded in the Solutions category of the XXV National Treasury Award, 2020: https://bit.ly/3v2IzCH

13   The data, as well as the treatment methodology and an interactive dashboard, are available at: https://bit.ly/3qtY17k.

14   Ipea promoted a Webinar to present the work. Video available at: https://www.ipea.gov.br/portal/index.php?option=-com_content&id=37204:2020-12-09-23-03-40

The SPREV database (federal servants) had information on the date of entry of the servant in his/her last career, allowing the calculation of the individual's time in that specific career. In the case of the states, the database only had information for the date of entry of the servant in more aggregate categories of careers, and not in his or her specific career. Therefore, eventually, when we use the expression "time in public service" both in the case of the Federal Government and in the case of the states, this caveat will be implicit.

II.2 – Main Assumptions

In this section, we will explain the main assumptions used in the simulation. In sum, we will continue to use the acronym RA to refer to the three personnel management measures (career lengthening, reduction of starting salary, and reduction of the replacement rate due to retirement and death) and the acronym SPP to refer to the temporary and extraordinary measure of suspension of career progressions and promotions.

Table 2 indicates the valid assumptions in each scenario. In the "with RA" columns, not all measures are necessarily simultaneously triggered. Indication of which are triggered, and which are not, will be made explicit in the results tables and graphs later.

In all scenarios, including the base one (no RA, no SPP), there is no wage replacement for inflation until 2026. In all, 16 scenarios were simulated in the study:

- a base case (no AR, no SPP);
- seven AR scenarios, corresponding to the three AR measures and combinations among them;
- seven AR scenarios, this time with SPP triggered;
- scenario with SPP only, without any RA measures.

TABLE 2. ASSUMPTIONS ADOPTED IN THE SCENARIOS

Parameter	Scenario			
	No RA without SPP (base case)	With RA No SPP	No RA with SPP	With RA With SPP
Duration of administrative reform measures (AR)	Never	Starting in 2022	Never	Starting in 2022
Duration of the measure to suspend progressions and promotions (SPP)	Never		Only in 2025 and 2026	
Inflation wage replacement	From 2027			
Period of career advancement (years since entry)	New and old servants: 20	New Servants: 40 Former servants: 20	New and old servants: 20	New Servants: 40 Former servants: 20
Annual nominal increase in average remuneration, resulting from progressions and promotions	New and old servants: 3%.	New servants: 1.5% Old servants: 3%.	New and old servants: 0%.	

Starting salary (percentage of prevailing without RA)	100%	70%	100%	70%
Annual replacement rate (% of the number of retirements and deaths from the previous year)	100%	60%	100%	60%
Occurrence of progression or promotion, for those who acquired the right	Every year		Suspended in 2025 and 2026	

Author's elaboration.

Note 1: RA = "administrative reform"; SPP = "suspension of progressions and promotions".

Note 2: "new servants" = those who joined the public service after the RA (2022, inclusive); "former servants" = those who joined up to and including 2021.

When triggered, the RA measures are effective as of 2022, and the SPP measure is only effective in 2025 and 2026. In the latter case, the year 2025 was chosen because it is the one in which the risk of non-compliance with the spending[15] cap goes from moderate to high, according to the Independent Fiscal Institution.[16] Although the trigger for this eventual measure (the SPP) may not be the spending cap, it was used as a reference in the simulation.

The wage replacement for inflation only occurs as of 2027, in all scenarios, including the baseline. Moreover, it is considered that no inflationary restitution occurs even between the year of data observation (2018) and the current year (2021), both for the federal government and the states. It is worth noting that, since this study evaluates only active public servants, the fiscal impact of inflation replacement for retirees with parity was not considered.

In our base scenario, we adopted a nominal growth of 3% per year in the average remuneration of the cohorts of servants in the career advancement phase, reflecting promotions and promotions. The adoption of this percentage does not imply if all servants individually progress in the career annually. This percentage intends to reflect, simply, the aggregate increase in expenditures resulting from the promotions of part of the public servants.

The 3% value is also compatible with the increases that occur from standard to standard, and from class to class, according to the Compensation Tables of the federal civil service. Taking as an example the basic salary of the General Plan of Positions of the Executive Branch (PGPE), in the January 2020 table, superior [17]level, there is an increase of 2.8% from standard to standard, and 3% when moving from one class to another. For intermediate-level positions, the percentages are lower: 1% and 1.5%, respectively. It is worth noting that when bonuses (such as the GDPGPE - Performance Bonus of the PGPE) are incorporated to the total remuneration, these variations can be smaller. The

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15   Instituted by Constitutional Amendment 95/2016. Available at: http://www.planalto.gov.br/ccivil_03/Constituicao/Emendas/Emc/emc95.htm

16   February 2021 Fiscal Monitoring Report, Table 14, published by the Independent Fiscal Institution. Available at: https://bit.ly/3lR1yxl

17   Available at: https://www.gov.br/economia/pt-br/assuntos/gestao/outros/gestao-publica/arquivos-e-publicacoes/tabela-de-remuneracao/arquivos/2020/tabela-de-remuneracao-80-jan2020.pdf/view

remuneration structure of other careers presents higher percentages, as is the case of the subsidy of the technician position, of the specialist career, of the Central Bank of Brazil. Increases of 3.1% to 9.8% are observed over the course of a career.

The explanation for the actual reduction in expenditures until 2027, visible in Charts 1 and 2 (section III), is that in all scenarios the inflation rate is greater than 3% per year (Table 3). This variation is greater than the nominal growth of expenditures with assets, because (a) the quantity does not grow in any scenario, remaining constant at most, in [18]the cases where the quantity replacement rate is equal to 100%; and (b) by hypothesis, the average compensation grows only for part of the public servants, i.e., those who are still in career advancement, who receive nominal gains of 3% a year at most (Table 2).

TABLE 3. ANNUAL INFLATION (IPCA) ADOPTED IN ALL SCENARIOS

2021	2022	2023	2024	2025 to 2031
3,61%	3,40%	3,21%	3,18%	3,25%

Source: Independent Fiscal Institution, Fiscal Monitoring Report February 2021, table "IFI Projections". Available at: https://bit.ly/3lR1yxl. Author's elaboration.

The average starting salary adopted in the simulations varies between the Federal Government and each state. It corresponds to the lowest value among the average salaries of the three cohorts with the shortest time of public service in each state, i.e., the groups with up to two years of public service in 2018. The calculation used nominal values from 2018, given our assumption of no inflation replacement since that year.

Mortality is simulated according to the age of the civil servants. Every year, in each age group, civil servants are drawn to leave the database, according to the average of the female and male mortality rates associated with federal civil servants occupying higher-level positions. The mortality table is the one used by the Special Secretariat of Social Security and Labor in simulations of the impact of the 2019 pension reform. The same table is used for the states.

There is no retirement due to resignation (voluntary or otherwise), but only due to retirement or death.

II.3 – Evolution of the quantity

The simulation of the quantity for each year is simple, made recursively, year by year, according to the following steps. Starting in 2018, to simulate the stock of active public servants in 2019,

1. Within each age group, servants were drawn to leave the base according to the probabilities of the life table;

2. among the survivors, all those who were over a threshold age (66) were retired (removed from the database);

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18   Except for the Federal Government quantity, for which, in the years 2021 and 2022, complementary income has been allocated in line with the LOA 2021. See section "II.4 Calibration".

3. we check how many individuals died or retired in steps 1 and 2 (denote this sum by N);

4. we draw, with replacement, N individuals from the group who, in 2018, had service time equal to zero (i.e., who were still in their first year of their career);

5. we advance, by one year, the age and length of service variables of all individuals in the base (except for the N drawn in step 4);

6. the N individuals drawn in step 4 then became part of the group with service time equal to zero in 2019.

The construction of the stock of active workers in 2020 was done by repeating the steps above, and so on. For a replacement rate different from 100%, we multiplied N by the rate. The draw was made with replacement to ensure that, in those years in which the number of people retiring was greater than the number of people with service time equal to zero, the draw of N observations was feasible.

In section "IV - Sensitivity Analysis," we checked the sensitivity of the results to changes in the age 66 threshold, a simplification that requires caution, given that in the real world, civil servants retire at a wide variety of ages, and may even remain active even after becoming eligible for retirement. The age of 66 was chosen because it resulted in an adequate calibration of the trajectory of the budget item "salaries and fixed advantages" (henceforth VVF) performed in relation to our simulated trajectory of compensation expenditures.

The way in which the replacement of public servants is carried out in this study differs from that adopted by Cavalcanti et al. (2020), in which retirements are allowed until the number of public servants reaches a percentage of the number observed at the beginning of the series. From then on, the replacements are 100%. In the present study, the same percentage (say, 60%) of public servants that die or retire each year is always replaced in the following year.

The annual replacement percentage for retirements and deaths, adopted in our simulations, was 60%. Such percentage was observed, for example, in 2018 in the Executive Branch. Thus, in addition to being in line with the reduction of this rate in that branch in recent years (according to PEP[19] data) - even if possibly due to the processing of the pension reform, leading active servants to retire - this percentage means that in 2031, the simulated quantity for the Federal Government is 92% of that observed in 2018. In part, this result is due to the imputation we made because of Annex V of the Annual Budget Law for the year 2021 (LOA 2021), as explained below.

II.4 – Calibration

This study represents an effort to simulate the expenditures with a specific item in the Brazilian budget: the "salaries and fixed advantages" (VVF). The advantage of simulating the trajectory of a specific item is the possibility of directly incorporating the estimated impact in simulations of the primary result of the public sector. After all, the simulated value would thus obey the same accounting classification of the budget laws. However, this task faces a challenge: the realization of an accurate mapping between (a) the compensation variables available in our databases, and (b) the VVF officially executed as public expenditure.

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19   Staff Statistics Panel. Available at: https://bit.ly/3ATh7sO

As a solution, we resorted to calibrations, i.e., subtle adjustments in certain parameters of the simulation, so that the simulated values for already closed years (2018 to 2020) coincided with the realized values. Such adherence was reasonably obtained, as will become clear in Charts 1 and 2 (section III). Next, we will briefly explain the main calibrations implemented.

II.4.1 – Federal Government

As a first calibration, we multiplied the monthly remuneration of each record in the base by 13.3, to take into account the 12 salary payments, plus the Christmas bonus (13th salary) and one-third vacation bonus. Since our remuneration data correspond to the calculation basis for the social security contribution, they do not necessarily correspond to the complete remuneration for at least part of the public servants. Thus, it is possible to argue that the ideal would be a higher value for the multiplication factor, reflecting components of the remuneration of the active workers not covered by the base. However, as mentioned in section "II.1 Data", the multiplication by a higher factor (15) did not lead to relevant differences in the estimated savings.

As a second calibration, the difference between the result of the multiplication by 13.3 in the year 2018 and the budget execution of the VVF in the same year was attributed to the portion of civil public agents that is absent from our database, that is, non-statutory public agents and civil police officers of the Federal District. With this adjustment, the simulated expenditure for 2018 equaled the realized one. In all subsequent years, the amount imputed to non-statutory public servants and civil police officers of the Federal District was kept constant in nominal terms until 2026, and from 2027 on, it began to receive a replacement for inflation.

Third, we performed calibration for the following three years (2019 to 2021). The retirement age threshold for 2018 (which affects the asset stock in subsequent years) was set at 70 to eliminate the residual difference between the realized and simulated VVFs for 2019. Such a threshold is high, but it was applied only in 2018. In all other years, the age was set at 66, remembering that the rule adopted for retirement is binary: every server that reaches the threshold is immediately retired. The value of 66 years still seems high, but it led to the best calibration for 2019 and 2020.

The entries of new public servants in the Executive Branch, between 2018 and 2020, were imputed according to those reported in the Personnel Statistics Panel (PEP). To reflect the entries in the other Branches, we increased these imputations by 20%. The percentage corresponds to the ratio between the stock of public servants of the other branches and the stock of the Executive Branch, based on 2018. The entries in 2020 were then increased by another 8,500, to bring the simulated expenditure closer to that year.

Fourth, for the 2021 inflows, we repeated the 2020 value, and added to it the amount necessary for VVF expenditure to increase by another R$ 2.4 billion, i.e., the primary impact forecast by Annex V of the 2021 LOA.[20] According to the Joint Technical [21]Note No. 4/2020, of the Budget Consultants of the House of Representatives and the Federal Senate, "Annex V of the 2021 PLOA foresees a primary

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20   Until the completion of this study, the engrossed bill approved by the National Congress had not been sanctioned. For this reason, we will refer to the engrossed bill. See Annex V, page 36, of the document, available at: https://bit.ly/3ukef5a

21   Available at: https://bit.ly/30vitdu. See Table 26 on page 58 of the document.

impact of R$ 2.4 billion for the provision, admission or hiring of 50,946 public servants.

A similar procedure was done for 2022, but in this case, we did not repeat the entries of 2020, but directly imputed the necessary entries so that the expenditure for this year would increase by another R$ 4.5 billion, according to the same Joint Technical Note. The impact of such hiring on subsequent years occurs indirectly, since the civil servants remain at the base, progressing in their careers.

Finally, it is worth mentioning that the Transparency Portal, of the Office of the Comptroller General, provides monthly data on civil servants. However, since there is no information on the date of entry into the career or public service, it was not possible to use this data to validate the dynamics of average remuneration per cohort.

II.4.2 – States

Similar calibrations as for the Federal Government were done for the states, but on an aggregate basis, rather than state by state. The multiplication by 13.3 and the imputation of expenditures to non-statutory was done in the same way.

As for the retirement age threshold, it was set at 70 in 2018, and 66 in subsequent years, as in the Federal Government. There was no income imputation, so that these, therefore, were endogenously determined by the model itself, resulting from 100% replacement between 2018 and 2021. In the scenarios with AR in which the quantitative replacement is reduced, the rate becomes 60%.

III – Main results

This section presents the most important results of the study. However, several complementary results are available in the appendix, such as estimates by state and reform scenario.

III.1 – General Result: Federal Government and states

The estimated savings over ten years is R$ 128 billion, considering active civil servants of the Federal Government and the states. Table 4 shows that this value refers to the simultaneous implementation of the three AR measures (hypothetically, always starting in 2022). The table also presents the estimated accumulated savings per year, until 2031, for different combinations of the AR measures. Each row in Table 4, therefore, is equivalent to the cumulative fiscal impact from the first year of the simulation (2022) to the year indicated in the first column.

TABLE 4. ACCUMULATED SAVINGS UNDER EACH SET OF MEASURES - FEDERAL GOVERNMENT AND STATES - R$ BILLION BY 2020

Year	Career lengthening only	Only reduction of the starting salary	Only reduction of the replacement rate	Lengthening + starting salary	Lengthening + replacement rate	Starting salary + replacement fee	Lengthening + starting salary + restocking fee
2022	0,0	1,5	1,1	1,5	1,1	2,3	2,3
2023	0,1	3,9	3,5	3,9	3,5	6,3	6,3

2024	0,3	7,2	7,1	7,4	7,3	12,2	12,3
2025	0,6	11,6	12,1	12,0	12,5	20,0	20,3
2026	1,2	17,0	18,5	17,8	19,3	30,0	30,6
2027	2,0	23,8	26,8	25,2	28,1	42,6	43,5
2028	3,1	32,1	36,9	34,3	39,1	57,9	59,4
2029	4,7	41,9	49,2	45,2	52,4	76,4	78,6
2030	6,9	53,5	63,9	58,3	68,4	98,2	101,4
2031	9,6	66,9	80,9	73,6	87,2	123,6	128,0

Author's elaboration.

Note 1: only active civil servants

Note 2: includes all the Branches.

Note 3: in no scenario was the suspension of progressions and promotions (SPP) triggered.

Another recent study that simulated the impact of these measures was Cavalcanti et al. (2020), prepared by researchers from the Institute for Applied Economic Research (Ipea). The similarity of the present study with that one is in the RA measures considered. However, the assumptions and the sets of servants analyzed differ. Below, we will make some considerations to make the values reasonably comparable.

The economy for the Federal Government, estimated in this study, was R$ 57 billion in ten years (2022-2031), considering active civil servants. One way to approximate the value that would correspond to ours, in Cavalcanti et al. (2020), would be, in Table 2 of that study, column 9, subtract scenario 1 from scenario 4 and then bring it to 2020 prices. The result would be R$ 80.7 billion. This operation is necessary because, unlike that study, in our base scenario we did not apply inflation restitution to salaries before 2027. That is, we did not restore inflation to the salaries of public servants, neither in the baseline scenario nor in the scenarios under RA. In addition, we did not apply a different replacement rate (for retirement and death) on high and mid-level civil servants, but the same rate. Another difference is that the period analyzed here is 2022-2031, while the other study considers 2020-2029.

The savings for the states, estimated in this study, were R$ 71 billion in ten years (2022-2031) for the active civil servants. As for the states, the comparison with Cavalcanti et al. (2020) is even more difficult because, among other differences, the authors include non-statutory servants in their calculation, apply inflation replacement in all scenarios (including the base scenario), and do not apply the career lengthening measure. With these caveats, the value reported in Table 3 of that study, brought to 2020 prices, is R$ 77.9 billion.

Given these differences among the studies, one should focus on the magnitude of the estimated savings, rather than on their numerical values specifically. The results suggest a total value (Federal Government and states) ranging from R$ 100 billion to R$ 200 billion over ten years, considering only the RA measures for active civil servants of the Federal Government and the states. This range is lower than the one that would be obtained if the impact of not restoring inflation to salaries were

incorporated into the total savings. In fact, the non-replacement of inflation has a relevant impact on the trajectory of expenditures, as will be seen below (Charts 1 and 2), but is not an AR measure.

We will detail our results for the Federal Government and the states in the rest of this paper.

III.2 – Federal Government

Chart 1 shows that, in the case without reform ("Scenario without RA"), there would be a change in the level of remuneration expenditures, going from about R$ 120 billion in recent years, to about R$ 110 billion at the end of the decade, at 2020 prices. The graph shows the trajectories for the budget item "salaries and fixed advantages - civilian personnel" (VVF), i.e., the Expenditure Element of code 11 in the budget classification.[22] As detailed in Table 5, the drop in spending between 2022 and 2026 is explained by the non-replacement of wage inflation, and not by the RA measures.

Despite the change in the level, it is noticeable that as of 2027, when the inflation rate is restored, two curves show an upward trajectory. These are the trajectories of the baseline scenario (without reform) and the scenario in which only the lengthening of careers was implemented. In fact, this is the measure with the least capacity to contain expenditures (Table 6). The measures to reduce the initial salary and the replacement rate for retirees and those who die have a significantly greater impact, both in the short and medium term.

Notwithstanding the growth after 2027, the expenditures of the scenario without AR tend to stabilize. Note that expenditure growth is increasingly smaller, resulting in a concave shape. To verify that such stability would not be merely apparent, we performed an exercise to extend the simulation horizon, decades ahead. The objective, of course, was not to produce precise estimates for a very distant future, but only to verify the stability aspect of the trajectory. The result was a stable trajectory.

CHART 1. SIMULATED EXPENDITURES FOR CIVILIAN PERSONNEL SALARIES AND FIXED ADVANTAGES - FEDERAL GOVERNMENT - R$ BILLION 2020

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22   From a formal point of view, the heading "salaries and fixed advantages" is a type of "expenditure element" of the public budget, and aggregates remuneration components such as the permanent staff salary, the salary for positions of trust, sick pay, some gratuities, and the night shift bonus. Remunerations of power members and non-statutory members are also included in the item. A more extensive list of these components, which are too numerous to mention here, can be found in the Budget Technical Manual (MTO 2021), chapter 4, section "4.6.2.1.4 Expenditure Element", available at: https://www1.siop. planejamento.gov.br/mto/doku.php/mto2021:cap4
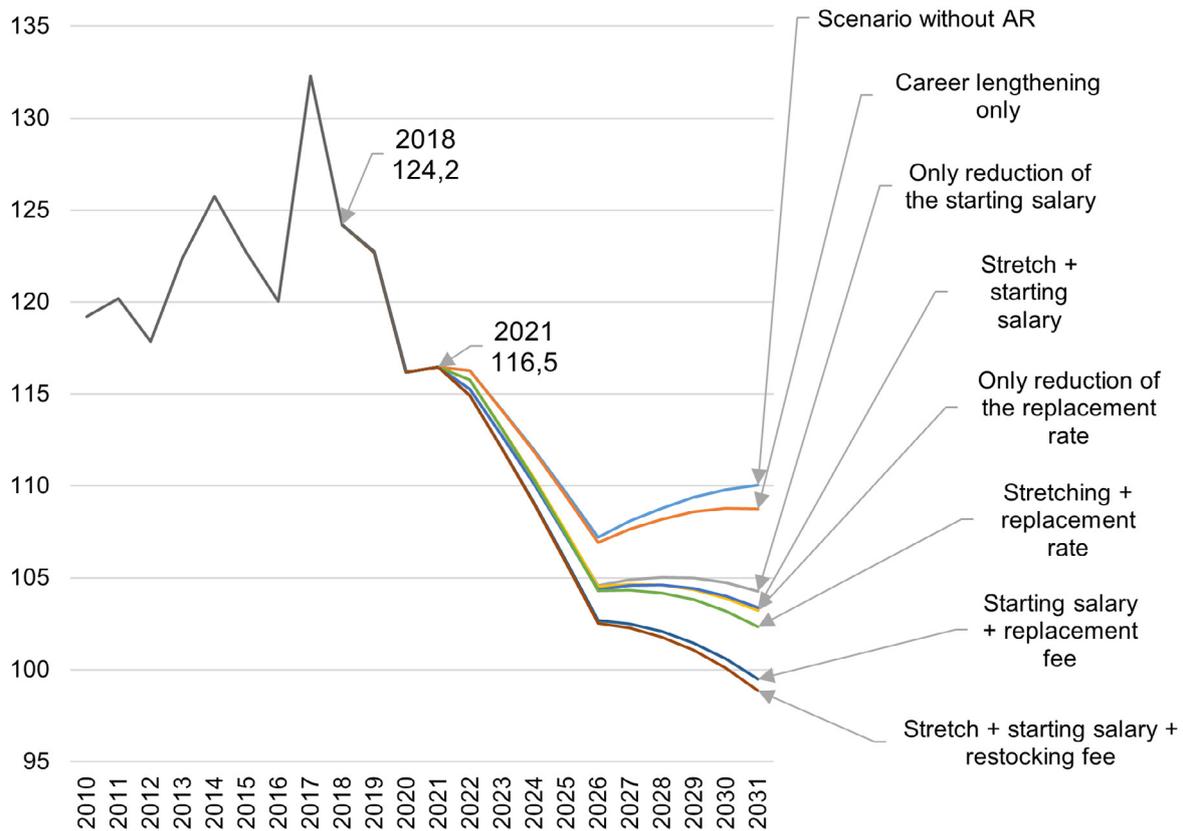
Source: the author (simulated values) and SIGA Brazil (realized values).

Note 1: As a calibration, a value for non-statutory servants and civil police of the Federal District, not covered by the database used, was added to the simulated values for civil servants. For details about the calibration, see the Methodology section, subsection Calibration.

Note 2: in no scenario was the suspension of progressions and promotions (SPP) triggered.

TABLE 5. EXPLANATIONS FOR THE SIMULATED PATHS IN CHART 1, BY PERIOD

2018 - 2020	2021 - 2022	2023 - 2026	2027 - 2031
Actual reduction due to non-replacement of inflation in wages.	Minor drop (or even small increase, depending on the scenario), due to a larger influx of new servants (Annex V of LOA 2021). See section "II.4 Calibration".	Actual reduction due to non-replacement of inflation in wages.	Expenditure starts to fall more slowly (or to grow, depending on the scenario), due to the replacement of inflation as of 2027.

Author's elaboration.

Although visually imperceptible, in Chart 1 the series of realized VVFs ends in 2020, while the other series begin in 2018, the year of observation of the database. That is, between 2018 and 2020, realized and simulated values overlap. The realized VVFs are not noticeable because the simulated trajectories were calibrated to reproduce the realized values as much as possible, as explained in sub-section "II.4 Calibration." It was not possible to achieve exact coincidence between the values, but the

difference is only R$ 80 million in 2020, or 0.07% of the realized VVF in that year (to take one of the years as an example).

The savings generated by the combination of two or more measures is not necessarily equal to the sum of the savings generated by the measures individually. This is because, when taken together, their effects interact.

It should be borne in mind that the expenditure on active public servants is composed of more items than just FVL, even though FVL represent most of the total. For example, employers' obligations, which typically represent about 21% of FVTPL, are [23]added to it to make up personnel expenditures, along with other items. It is worth noting that in the budget classification, employers' obligations are not primary expenditure.

Since the object of the simulation was only the portion of the VVF relative to the civil servants with permanent status, the portion of non-statutory civil servants was assumed as constant in nominal terms until 2026, and received a replacement for inflation as of 2027, like the statutory civil servants. It is worth remembering that its calculation was made, by simplification, by the difference, in the year of database observation (2018), between the realized and simulated values of the VVF. We are aware, however, that the amount for non-statutory servants will vary over time, depending on the decisions of the public administration and any legal changes. Again, this is only a parsimonious hypothesis for simulation purposes.

The civil police officers of the Federal District were not included in the Federal Government's base, but their remuneration is paid by the Federal Government. Therefore, these servants are also included in the difference mentioned in the previous paragraph.

The measures that lead to the largest savings are the reduction of the initial salary and the reduction of the replacement rate due to retirement or death (Table 6). In the early years, the reduction in the wage has the greatest impact, but after some time, the reduction in the replacement rate begins to induce greater savings. These results depend, of course, on the intensity with which these reductions are made. In this study, we adopt a reduction in the initial wage of 30%, and a reduction in the annual replacement rate from 100% to 60% (details in section "II.2 Main Assumptions").

TABLE 6. ACCUMULATED SAVINGS UNDER EACH SET OF MEASURES - FEDERAL GOVERNMENT - R$ BILLION 2020

Year	Career lengthening only	Only reduction of the starting salary	Only reduction of the replacement rate	Lengthening + starting salary	Lengthening + replacement rate	Starting salary + replacement fee	Lengthening + starting salary + restocking fee
2022	0.0	1.0	0.5	1.0	0.5	1.3	1.3
2023	0.1	2.4	1.5	2.4	1.5	3.4	3.5
2024	0.2	4.2	3.1	4.3	3.2	6.3	6.4

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23   According to SIGA Brazil data. Available at: https://www12.senado.leg.br/orcamento/sigabrasil

2025	0.4	6.4	5.2	6.7	5.5	10.0	10.2
2026	0.7	9.1	7.9	9.5	8.4	14.6	14.9
2027	1.1	12.2	11.3	13.0	12.2	20.2	20.7
2028	1.7	16.0	15.5	17.2	16.8	26.9	27.8
2029	2.5	20.4	20.5	22.2	22.4	34.8	36.1
2030	3.5	25.5	26.4	28.0	29.0	44.0	45.8
2031	4.8	31.3	33.3	34.7	36.7	54.6	57.0

Author's elaboration.

Note 1: only active civil servants.

Note 2: Includes all Branches. Does not include civil police officers in the Federal District.

Note 3: in no scenario was the suspension of progressions and promotions (SPP) triggered.

III.3 – States

Graph 2 presents the simulated trajectories of the expenditure with "fixed salaries and advantages - civilian personnel" for the states (whenever we refer to the states in this study, we understand the Federal District to be included). The same explanations for the trajectory of the Federal Government (Table 5) apply here, except for the item concerning Annex V of the LOA 2021. The simulation procedure for the Federal Government and the states is the same, with only occasional differences in the assumptions, as explained in subsection "II.2 Main assumptions".

In Chart 2, the series of realized VVFs ends in 2019, while the other series begin in 2018, the year of observation of the database. The last value of the realized VVF was maintained to make clear the proximity between the simulated and realized values in 2019. Such approximation was achieved via calibration (see subsection "II.4 Calibration"). It was not possible to achieve exact coincidence between the values, but the difference is only R$ 1.4 billion in 2019, or 0,7% of the realized VVF in that year.

Table 7 presents the cumulative savings under each set of measures. Each row in Table 7 equals the cumulative fiscal impact from the first year of the simulation (2022) to the year indicated in the first column.

Table 8 presents the economy by state, accumulated over the entire period 2022-2031.

TABLE 7. CUMULATIVE SAVINGS UNDER EACH SET OF MEASURES - TOTAL STATES - R$ BILLION 2020

Year	Career lengthening only	Only reduction of the starting salary	Only reduction of the replacement rate	Lengthening + starting salary	Lengthening + replacement rate	Starting salary + replacement fee	Lengthening + starting salary + restocking fee
2022	0.0	0.5	0.6	0.5	0.6	0.9	0.9
2023	0.0	1.5	2.0	1.5	2.0	2.8	2.8

2024	0.1	3.0	4.0	3.1	4.1	5.8	5.9
2025	0.2	5.2	6.9	5.3	7.0	10.0	10.1
2026	0.5	8.0	10.6	8.3	10.9	15.4	15.6
2027	0.9	11.6	15.5	12.2	16.0	22.4	22.8
2028	1.4	16.0	21.4	17.1	22.3	31.1	31.7
2029	2.3	21.5	28.7	23.1	30.1	41.6	42.5
2030	3.3	28.0	37.4	30.3	39.4	54.2	55.6
2031	4.8	35.6	47.7	39.0	50.5	69.0	71.0

Author's elaboration.

Note 1: only active civil servants.

Note 2: includes all the Branches.

Note 3: includes civil police officers of the Federal District. Even though these servants have their remuneration paid by the Federal Government, they numbered less than 5,000 in 2018, or 5.5% of the civil servants of the Federal District. Therefore, they represent a small portion of the database, not influencing the overall result.

Note 4: in no scenario was the suspension of progressions and promotions (SPP) triggered.

CHART 2. SIMULATED EXPENDITURES FOR FIXED CIVILIAN PERSONNEL SALARIES AND ADVANTAGES - STATES - R$ BILLION 2020
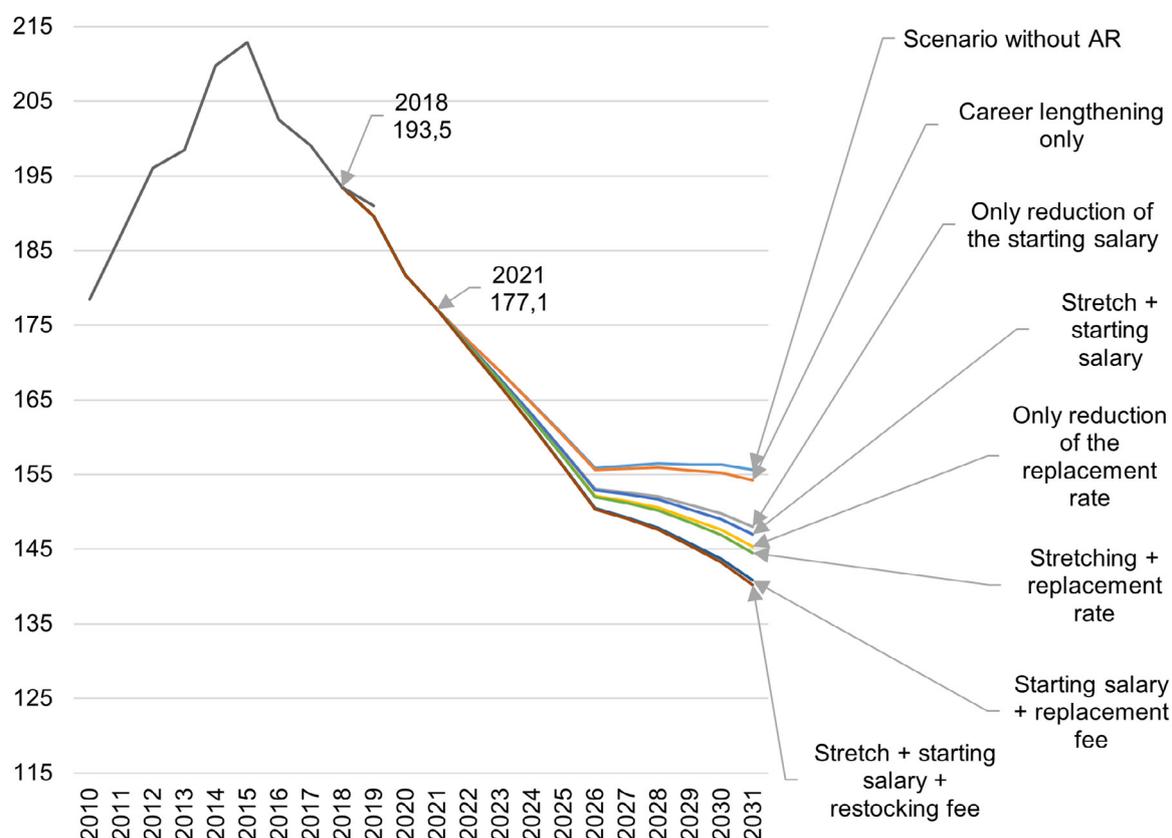
Source: the author (simulated values) and Cavalcanti et al. (2020) (realized values).

Note 1: As a calibration, a value for non-statutory servants was added to the simulated values for statutory ser-

vants. For details about the calibration, see the Methodology section, subsection Calibration.

Note 2: includes civil police officers of the Federal District. Even though these servants have their remuneration paid by the Federal Government, they totaled less than 5,000 in 2018, or 5.5% of the civil servants of the Federal District. Therefore, they represent a small portion of the database, not influencing the overall result.

Note 3: in no scenario was the suspension of progressions and promotions (SPP) triggered.

TABLE 8. CUMULATIVE SAVINGS IN TEN YEARS (2022-2031) UNDER EACH SET OF MEASURES - STATES - R$ BILLION 2020

| State	Career lengthening only	Only reduction of the starting salary	Only reduction of the replacement rate	Lengthening + starting salary	Lengthening + replacement rate	Starting salary + replacement fee	Lengthening + starting salary + restocking fee
AC	0,03	0,24	0,32	0,26	0,34	0,47	0,48
AL	0,06	0,42	0,56	0,46	0,59	0,81	0,83
AM	0,07	0,52	0,7	0,57	0,74	1,01	1,04
AP	0,02	0,16	0,22	0,18	0,23	0,32	0,33
BA	0,49	3,6	4,82	3,94	5,11	6,98	7,18
CE	0,2	1,43	1,9	1,57	2,03	2,76	2,84
DF	0,14	1,12	1,5	1,22	1,58	2,17	2,22
ES	0,04	0,32	0,42	0,34	0,45	0,61	0,63
GO	0,15	1,19	1,59	1,29	1,68	2,3	2,36
MA	0,27	1,9	2,54	2,09	2,7	3,68	3,79
MG	0,2	1,59	2,13	1,74	2,25	3,08	3,17
MS	0,09	0,67	0,89	0,73	0,94	1,29	1,32
MT	0,05	0,4	0,53	0,43	0,56	0,77	0,79
PA	0,21	1,52	2,03	1,67	2,16	2,94	3,03
PB	0,07	0,51	0,67	0,55	0,72	0,98	1,01
PE	0,16	1,14	1,52	1,24	1,61	2,2	2,26
PI	0,08	0,58	0,77	0,64	0,82	1,12	1,16
PR	0,44	3,35	4,48	3,66	4,75	6,48	6,67
RJ	0,33	2,44	3,27	2,66	3,47	4,73	4,86
RN	0,07	0,54	0,72	0,59	0,76	1,05	1,08
RO	0,05	0,39	0,53	0,43	0,56	0,76	0,79
RR	0,02	0,12	0,16	0,13	0,17	0,23	0,24
RS	0,26	1,99	2,66	2,17	2,82	3,86	3,96
SC	0,11	0,89	1,19	0,97	1,26	1,72	1,77
SE	0,04	0,33	0,44	0,36	0,46	0,63	0,65
SP	1,05	7,96	10,66	8,69	11,29	15,42	15,86
TO	0,04	0,34	0,46	0,37	0,48	0,66	0,68
Total	4,75	35,64	47,68	38,97	50,53	69,02	71,01

Author's elaboration.

Note 1: only active civil servants.

Note 2: includes all the Branches.

Note 3: includes civil police officers of the Federal District. Even though these servants have their remuneration paid by the Federal Government, they numbered less than 5,000 in 2018, or 5.5% of the civil servants of the Federal District. Therefore, they represent a small portion of the database, not influencing the overall result.

Note 4: in no scenario was the suspension of progressions and promotions (SPP) triggered.

III.4 – Results under suspension of progressions and promotions

Table 9 presents the savings estimates for the case of triggering the SPP measure (suspension of career progressions and promotions) in 2025 and 2026, with SPP ceasing to be in effect as of 2027. No RA measure is triggered. Table 10, in turn, presents the result of the joint activation of SPP (in 2025 and 2026), and the RA measures (from 2022 on).

TABLE 9. ACCUMULATED SAVINGS UNDER SUSPENSION OF PROGRESSIONS AND PROMOTIONS - FEDERAL GOVERNMENT AND STATES - R$ BILLION BY 2020

2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
0,0	0,0	0,0	4,0	11,6	18,7	25,4	31,8	37,8	43,2

Author's elaboration.

Note 1: only active civil servants.

Note 2: includes all the Branches.

Note 3: in no scenario was any administrative reform measure triggered.

Note that even though the SPP measure will be in effect for only two years, its effects are longer lasting, since after its expiration we do not consider that the public servants will receive compensation for the years without progression and promotion - for example, a more accelerated progression. We have assumed only that they will have the right to progression for two more years, that is, SPP makes them take two more years to reach the top of their career. With this, even after 2026, a VVF expenditure saving is generated annually.

TABLE 10. ACCUMULATED SAVINGS UNDER EACH SET OF ADMINISTRATIVE REFORM MEASURES, WITH SUSPENSION OF PROGRESSIONS AND PROMOTIONS - FEDERAL GOVERNMENT AND STATES - R$ BILLION BY 2020DE 2020

Year	Only career lengthening + suspension of progressions	Only reduction of the starting salary +suspension of progressions	Only reduction of the replacement rate +suspension of progressions	Lengthening +starting salary +suspension of progressions	Lengthening + replacement rate +suspension of progressions	Starting salary + replacement rate +suspension of progressions	Lengthening + starting salary + replacement rate+suspension of progressions
2022	0,0	1,5	1,1	1,5	1,1	2,3	2,3

2023	0,1	3,9	3,5	3,9	3,5	6,3	6,3
2024	0,3	7,2	7,1	7,4	7,3	12,2	12,3
2025	4,4	15,5	16,0	15,8	16,3	23,8	24,1
2026	12,2	28,3	29,8	28,7	30,2	41,0	41,3
2027	19,8	42,0	44,9	42,7	45,6	60,3	60,8
2028	27,2	56,7	61,5	58,0	62,7	82,0	82,8
2029	34,8	72,7	79,9	74,8	81,9	106,4	107,8
2030	42,4	90,0	100,2	93,3	103,3	133,7	135,9
2031	50,1	108,6	122,4	113,4	126,9	164,1	167,2

Author's elaboration.

Note 1: only active civil servants.

Note 2: includes all the Branches.

IV – Sensitivity analysis of the estimates

This section shows how the simulated economy responds to variations in the scenario parameters. Such sensitivity analysis, done only for the Federal Government, allows us to check whether the simulation results are overly dependent on specific parameter values. To facilitate the interpretation of the tables, we have divided the parameters into two groups:

- AR parameters: career lengthening, reduction of the starting salary, and reduction of the replacement rate due to retirement or death;
- Parameters common to all scenarios: parameters that are not associated to RA nor to SPP, but rather determine the base scenario, and are common to all other scenarios. For example, the retirement age threshold.

In the second case, it is desirable that the results change little, indicating robustness of the simulation strategy. However, as will be seen, these proved to be very sensitive to the threshold retirement age, for example. For the study, there was a need to choose one of the thresholds for drawing conclusions. The value adopted, age 66, is justified because it is the one that proved to be most appropriate for calibration purposes, as explained above.

In sum, the analysis was not reproduced for the states. Nevertheless, since the simulation implemented for states is practically identical to the one implemented for the Federal Government, it is expected that the qualitative conclusions of this section will also be valid for these entities.

Some of the values considered in the following analysis are unrealistic, but useful for sensitivity assessment. The analyses presented do not exhaust all possibilities, which are diverse.

Tables 11 to 14, below, assume activation of the three AR measures, without SPP activation. Each table presents the simulated savings for the Federal Government, accumulated between 2022 and 2031, for different values of certain parameters.

IV.1 Sensitivity to salary reduction and career lengthening

Table 11 shows that the estimated savings are quite sensitive to a reduction in the starting salary, but not very sensitive to career lengthening.

It is worth remembering, as a reference, that the estimated economy with the activation of the three RA measures was R$ 57 billion, as seen previously (Table 6). Therefore, in case the starting salary is reduced to 90% of that currently in effect - instead of the 70% used in Table 6 -, the savings would be 23.7% lower, to R$ 43.5 billion. On the other hand, if the rate of progression were to increase by 20% - instead of 100%, in other words, double, as in Table 6 - the savings would be reduced by only 2.8%, to R$ 55.4 billion.

TABLE 11. ACCUMULATED SAVINGS BETWEEN 2022 AND 2031 (R$ BILLIONS - AT 2020 PRICES) - WITH ADMINISTRATIVE REFORM (ALL MEASURES), WITHOUT SUSPENSION OF PROGRESSIONS AND PROMOTIONS

		Ratio between initial salaries, with and without retirement** (RA parameter)			
		50%	70%	90%	100%
Ratio between salary increases by progression, without and with retirement* (AR parameter)	1,0	68,78	54,57	40,36	33,26
	1,2	69,36	55,39	41,41	34,43
	1,4	69,77	55,96	42,15	35,24
	1,6	70,08	56,39	42,70	35,85
	1,8	70,31	56,71	43,12	36,32
	2,0	70,49	56,97	43,45	36,69

Author's elaboration.

Note 1: only active civil servants.

Note 2: Includes all Branches. Does not include civil police officers in the Federal District.

*Note 3: this is how much the increase by progression and promotion, assumed in the base scenario - without reform, which is 3% per year - represents of the increase assumed in the scenario with reform. For example, in the published text of the study, the ratio is 2, since the increase becomes 1.5% per year. Thus, we have a measure of the intensity of the career lengthening (in the example, the time doubled).

**Note 4: this is how much the new initial compensation (i.e., with reform) represents of the initial compensation assumed in the scenario without reform. For example, in the published text of the study, the ratio is 70%, since the new average salary now represents 70% of the case without reform.

IV.2 – Sensitivity to starting salary and progression earnings

The Table 12 shows that the estimated savings are not very sensitive to changes in the salary increase by progression, but very sensitive to the average starting pay of the base case.

In case the salary growth by progression is 1% per year - instead of the 3% adopted in Table 6, the savings would be 8.5% smaller, increasing to R$ 52.2 billion. On the other hand, if the average starting salary were R$ 6,000 - instead of the R$ 7,409.95 implied in Table 6 - the savings would be 19% smaller, to R$ 46.1 billion.

TABLE 12. ACCUMULATED SAVINGS BETWEEN 2022 AND 2031 (R$ BILLIONS - AT 2020 PRICES) - WITH ADMINISTRATIVE REFORM (ALL MEASURES), WITHOUT SUSPENSION OF PROGRESSIONS AND PROMOTIONS

		Average initial remuneration (R$) (Parameter common to all scenarios)				
		6.000	7.000	7.409,95	8.000	9.000
Salary increases by progression, without retirement (% per year) (Parameter common to all scenarios)	1%	42,23	49,27	52,15	56,30	63,34
	2%	44,13	51,49	54,50	58,84	66,20
	3%	46,13	53,82	56,97	61,51	69,20
	4%	48,23	56,27	59,56	64,30	72,34
	5%	50,43	58,84	62,28	67,24	75,65

Author's elaboration.

Note 1: only active civil servants.

Note 2: Includes all Branches. Does not include civil police officers in the Federal District.

IV.3 – Sensitivity to retirement age and replacement rate

The Table 13 shows that the estimated savings are quite sensitive to both the threshold retirement age and the replacement rate due to retirement or death.

In case the threshold age was 65 instead of 66, as in Table 6, the savings would be 17.4% greater, rising to R$ 67 billion. On the other hand, if the replacement rate were 80% - instead of 60%, as in Table 6, the savings would be 19.6% lower at R$ 45.8 billion.

TABLE 13. ACCUMULATED SAVINGS BETWEEN 2022 AND 2031 (R$ BILLIONS - AT 2020 PRICES) - WITH ADMINISTRATIVE REFORM (ALL MEASURES), WITHOUT SUSPENSION OF PROGRESSIONS AND PROMOTIONS

		Retirement age (years) (Parameter common to all scenarios)				
		64	65	66	67	68
Replacement rate (%) (AR parameter)	50%	85,11	73,52	62,53	52,15	43,40
	60%	77,33	66,89	56,97	47,62	39,74
	80%	61,74	53,57	45,83	38,53	32,40
	100%	46,06	40,19	34,65	29,42	25,05

Author's elaboration.

Note 1: only active civil servants.

Note 2: Includes all Branches. Does not include civil police officers in the Federal District.

IV.4 – Sensitivity to change in gain by progression and time of career advancement

Finally, Table 14 shows that changes in the career advancement period (of former public ser-

vants) have no impact on the estimated savings, because the simulation is done until 2031, and the shortest period of advancement in Table 14 is 10 years.

TABLE 14. ACCUMULATED SAVINGS BETWEEN 2022 AND 2031 (R$ BILLIONS - AT 2020 PRICES) - WITH ADMINISTRATIVE REFORM (ALL MEASURES), WITHOUT SUSPENSION OF PROGRESSIONS AND PROMOTIONS

		Ratio between salary increases by progression, without and with retirement* (AR parameter)					
		1,0	1,2	1,4	1,6	1,8	2,0
Period of career advancement of former public servants** (years since entry) (Parameter common to all scenarios)	10	54,57	55,39	55,96	56,39	56,71	56,97
	20	54,57	55,39	55,96	56,39	56,71	56,97
	30	54,57	55,39	55,96	56,39	56,71	56,97

Author's elaboration.

Note 1: only active civil servants.

Note 2: Includes all Branches. Does not include civil police officers in the Federal District.

*Note 3: this is how much the increase by progression and promotion, assumed in the base scenario - without reform, which is 3% per year - represents of the increase assumed in the scenario with reform. For example, in the published text of the study, the ratio is 2, since the increase becomes 1.5% per year. Thus, we have a measure of the intensity of the career lengthening (in the example, the time doubled).

**Note 4: that is, servants who entered the career before the reform.

V – Conclusion

This study estimated in R$ 128 billion the economy, in ten years (2022-2031), with civilian active personnel expenditures, resulting from people management measures in the Federal Government and in the states. These measures will possibly be adopted in the scope of an administrative reform, the first stage of which was recently proposed by the Executive Branch through PEC 32/2020.

The analysis included only active civil servants. Thus, the savings estimated here should be understood as a lower limit, since the eventual legal implementation of the measures analyzed may also include non-statutory agents. Our scenarios consider that the measures would be fully implemented as of 2022. However, one should be aware that the implementation of the measures, even if approved, may be gradual throughout the decade due to legal challenges, need for administrative adaptations, etc. In this case of gradual implementation, the savings by 2031 will be less than estimated.

The three people management measures analyzed were: (i) career lengthening, doubling the time required for promotions and progressions; (ii) reduction of the starting salary of careers by 30%; (iii) reduction in the replacement rate of servants who retire or die, from 100% to 60%. The value of R$ 128 billion corresponds to the activation of the three measures together, starting in 2022.

The reduction in initial salary, taken alone, would generate accumulated savings of R$ 67 billion

by 2031. The reduction in the replacement rate due to death or retirement, in turn, would generate accumulated savings of R$ 81 billion over the same period. The values are significantly higher than the savings generated by the career lengthening measure (R$ 9.6 billion). When triggered simultaneously, the measures cause total savings lower than the sum of the savings generated by the isolated triggering of each measure, because the measures interact in determining the dynamics of expenditures.

The study also verified the impact of a temporary and extraordinary measure to contain expenditures (suspension of career progressions and promotions), effective in 2025 and 2026. The accumulated savings, absent the other measures mentioned above, would be R$ 43.2 billion by 2031.

It should be cautioned that simulations are useful for conclusions about the magnitude of expenditure savings, not for determining precisely what these savings will be at the end of the next ten years.

References

Cavalcanti, Marco Antônio F. de H.; Santos, Cláudio Hamilton Matos dos; Souza Júnior, José Ronaldo de C.; Berçot, Ana Paula R.; Pires, Gustavo Martins Venâncio; Mendonça, Igor Ribeiro. 2020. "Adjustments in public sector personnel expenditures: exploratory scenarios for the period 2020-2039." Technical Note. IPEA Conjuntura Letter, no. 48 (3rd quarter 2020): 1-16. https://www.ipea.gov.br/portal/images/stories/PDFs/conjuntura/200914_cc_48_nt_ajuste_gastos_pessoal.pdf (Accessed October 18, 2021).

Lopez, Félix.; Guedes, Erivelton. 2019. "Three decades of civil service in Brazil (1986 - 2017). " Atlas of the Brazilian State.
https://www.ipea.gov.br/atlasestado/indicadores (Accessed October 18, 2021).

Lopez, Félix.; Mendes, José Teles. 2021. "Remunerations of active civil servants of the Federal Executive (1999 - 2020). " Technical Note/Diest/Ipea No. 48 (March 2021): 1-20. https://www.ipea.gov.br/portal/images/stories/PDFs/nota_tecnica/210312_nt_diest_n_48.pdf (Accessed October 18, 2021).

Santos, Cláudio Hamilton Matos dos; Pires, Gustavo Martins Venâncio; Mendonça, Igor Ribeiro. 2020. "Projections for expenditures with salaries and fixed advantages of active personnel and with retirements and pensions of Brazilian state public administrations (2020-2059). " Mimeo.

Appendix

A.1 Savings by state and combination of people management measures

In this section we will present tables analogous to Table 7, but by state.

A.1.1 Acre

TABLE 15. ACCUMULATED SAVINGS UNDER EACH SET OF MEASURES - R$ BILLIONS 2020 - WITH ADMINISTRATIVE REFORM, WITHOUT SUSPENSION OF PROGRESSIONS AND PROMOTIONS

Year	Career lengthening only	Only reduction of the starting salary	Only reduction of the replacement rate	Lengthening + starting salary	Lengthening + replacement rate	Starting salary + replacement fee	Lengthening + starting salary + restocking fee
2022	0,00	0,00	0,00	0,00	0,00	0,01	0,01
2023	0,00	0,01	0,01	0,01	0,01	0,02	0,02
2024	0,00	0,02	0,03	0,02	0,03	0,04	0,04
2025	0,00	0,03	0,05	0,04	0,05	0,07	0,07
2026	0,00	0,05	0,07	0,06	0,07	0,10	0,10
2027	0,01	0,08	0,10	0,08	0,11	0,15	0,15
2028	0,01	0,11	0,14	0,11	0,15	0,21	0,21
2029	0,02	0,14	0,19	0,16	0,20	0,28	0,29
2030	0,02	0,19	0,25	0,20	0,27	0,37	0,38
2031	0,03	0,24	0,32	0,26	0,34	0,47	0,48

Author's elaboration.

Note 1: only active civil servants.

Note 2: includes all the Branches.

A.1.2 Alagoas

TABLE 16. EACCUMULATED SAVINGS UNDER EACH SET OF MEASURES - R$ BILLIONS 2020 - WITH ADMINISTRATIVE REFORM, WITHOUT SUSPENSION OF PROGRESSIONS AND PROMOTIONS

Year	Career lengthening only	Only reduction of the starting salary	Only reduction of the replacement rate	Lengthening + starting salary	Lengthening + replacement rate	Starting salary + replacement fee	Lengthening + starting salary + restocking fee
2022	0,00	0,01	0,01	0,01	0,01	0,01	0,01
2023	0,00	0,02	0,02	0,02	0,02	0,03	0,03
2024	0,00	0,04	0,05	0,04	0,05	0,07	0,07
2025	0,00	0,06	0,08	0,06	0,09	0,12	0,12
2026	0,01	0,10	0,13	0,10	0,13	0,19	0,19

Year							
2027	0,01	0,14	0,19	0,15	0,19	0,27	0,27
2028	0,02	0,19	0,26	0,20	0,27	0,37	0,38
2029	0,03	0,25	0,34	0,27	0,36	0,49	0,50
2030	0,04	0,33	0,44	0,36	0,47	0,64	0,66
2031	0,06	0,42	0,56	0,46	0,59	0,81	0,83

Author's elaboration.

Note 1: only active civil servants.

Note 2: includes all the Branches.

A.1.3 Amapá

TABLE 17. ACCUMULATED SAVINGS UNDER EACH SET OF MEASURES - R$ BILLIONS 2020 - WITH ADMINISTRATIVE REFORM, WITHOUT SUSPENSION OF PROGRESSIONS AND PROMOTIONS

Year	Career lengthening only	Only reduction of the starting salary	Only reduction of the replacement rate	Lengthening + starting salary	Lengthening + replacement rate	Starting salary + replacement fee	Lengthening + starting salary + restocking fee
2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2023	0.00	0.01	0.01	0.01	0.01	0.01	0.01
2024	0.00	0.01	0.02	0.01	0.02	0.03	0.03
2025	0.00	0.02	0.03	0.02	0.03	0.05	0.05
2026	0.00	0.04	0.05	0.04	0.05	0.07	0.07
2027	0.00	0.05	0.07	0.06	0.07	0.10	0.10
2028	0.01	0.07	0.10	0.08	0.10	0.14	0.14
2029	0.01	0.10	0.13	0.10	0.14	0.19	0.19
2030	0.02	0.13	0.17	0.14	0.18	0.25	0.25
2031	0.02	0.16	0.22	0.18	0.23	0.32	0.33

Author's elaboration.

Note 1: only active civil servants.

Note 2: includes all the Branches.

A.1.4 Amazonas

TABLE 18. ACCUMULATED SAVINGS UNDER EACH SET OF MEASURES - R$ BILLIONS 2020 - WITH ADMINISTRATIVE REFORM, WITHOUT SUSPENSION OF PROGRESSIONS AND PROMOTIONS

Year	Career lengthening only	Only reduction of the starting salary	Only reduction of the replacement rate	Lengthening + starting salary	Lengthening + replacement rate	Starting salary + replacement fee	Lengthening + starting salary + restocking fee
2022	0,00	0,01	0,01	0,01	0,01	0,01	0,01
2023	0,00	0,02	0,03	0,02	0,03	0,04	0,04
2024	0,00	0,05	0,06	0,05	0,06	0,09	0,09
2025	0,00	0,08	0,11	0,08	0,11	0,15	0,15
2026	0,01	0,12	0,16	0,13	0,17	0,23	0,24
2027	0,01	0,17	0,23	0,18	0,24	0,33	0,34
2028	0,02	0,24	0,32	0,25	0,33	0,46	0,47
2029	0,03	0,31	0,42	0,34	0,44	0,61	0,62
2030	0,05	0,41	0,55	0,44	0,58	0,79	0,81
2031	0,07	0,52	0,70	0,57	0,74	1,01	1,04

Author's elaboration.

Note 1: only active civil servants.

Note 2: includes all the Branches.

A.1.5 Bahia

TABLE 19. ACCUMULATED SAVINGS UNDER EACH SET OF MEASURES - R$ BILLIONS 2020 - WITH ADMINISTRATIVE REFORM, WITHOUT SUSPENSION OF PROGRESSIONS AND PROMOTIONS

Year	Career lengthening only	Only reduction of the starting salary	Only reduction of the replacement rate	Lengthening + starting salary	Lengthening + replacement rate	Starting salary + replacement fee	Lengthening + starting salary + restocking fee
2022	0,00	0,05	0,07	0,05	0,07	0,09	0,09
2023	0,00	0,15	0,20	0,15	0,20	0,29	0,29
2024	0,01	0,31	0,41	0,32	0,42	0,60	0,60
2025	0,02	0,53	0,71	0,55	0,72	1,02	1,03
2026	0,05	0,82	1,09	0,85	1,12	1,58	1,60
2027	0,09	1,18	1,58	1,25	1,63	2,29	2,33
2028	0,15	1,63	2,18	1,74	2,27	3,16	3,23
2029	0,23	2,19	2,92	2,35	3,06	4,23	4,33
2030	0,34	2,84	3,80	3,08	4,01	5,50	5,65
2031	0,49	3,60	4,82	3,94	5,11	6,98	7,18

Author's elaboration.

Note 1: only active civil servants.

Note 2: includes all the Branches.

A.1.6 Ceará

TABLE 20. ACCUMULATED SAVINGS UNDER EACH SET OF MEASURES - R$ BILLIONS 2020 - WITH ADMINISTRATIVE REFORM, WITHOUT SUSPENSION OF PROGRESSIONS AND PROMOTIONS

Year	Career lengthening only	Only reduction of the starting salary	Only reduction of the replacement rate	Lengthening + starting salary	Lengthening + replacement rate	Starting salary + replacement fee	Lengthening + starting salary + restocking fee
2022	0,00	0,02	0,03	0,02	0,03	0,05	0,05
2023	0,00	0,07	0,09	0,07	0,10	0,14	0,14
2024	0,00	0,14	0,19	0,15	0,19	0,28	0,28
2025	0,01	0,24	0,32	0,25	0,33	0,46	0,47
2026	0,02	0,36	0,48	0,38	0,50	0,70	0,71
2027	0,04	0,51	0,68	0,54	0,71	0,99	1,01
2028	0,07	0,69	0,93	0,74	0,97	1,34	1,37
2029	0,10	0,91	1,21	0,98	1,27	1,75	1,79
2030	0,15	1,15	1,53	1,25	1,62	2,22	2,29
2031	0,20	1,43	1,90	1,57	2,03	2,76	2,84

Author's elaboration.

Note 1: only active civil servants.

Note 2: includes all the Branches.

A.1.7 Distrito Federal

TABLE 21. ACCUMULATED SAVINGS UNDER EACH SET OF MEASURES - R$ BILLIONS 2020 - WITH ADMINISTRATIVE REFORM, WITHOUT SUSPENSION OF PROGRESSIONS AND PROMOTIONS

Year	Career lengthening only	Only reduction of the starting salary	Only reduction of the replacement rate	Lengthening + starting salary	Lengthening + replacement rate	Starting salary + replacement fee	Lengthening + starting salary + restocking fee
2022	0,00	0,01	0,02	0,01	0,02	0,02	0,02
2023	0,00	0,04	0,05	0,04	0,05	0,07	0,07
2024	0,00	0,08	0,11	0,08	0,11	0,15	0,15
2025	0,01	0,14	0,18	0,14	0,19	0,27	0,27
2026	0,01	0,22	0,29	0,22	0,30	0,42	0,42
2027	0,02	0,32	0,43	0,34	0,44	0,62	0,63
2028	0,04	0,46	0,61	0,49	0,64	0,89	0,90

2029	0,06	0,63	0,85	0,68	0,88	1,22	1,25
2030	0,09	0,85	1,14	0,92	1,19	1,65	1,69
2031	0,14	1,12	1,50	1,22	1,58	2,17	2,22

Author's elaboration.

Note 1: only active civil servants.

Note 2: includes all the Branches.

A.1.8 Espírito Santo

TABLE 22. ACCUMULATED SAVINGS UNDER EACH SET OF MEASURES - R$ BILLIONS 2020 - WITH ADMINISTRATIVE REFORM, WITHOUT SUSPENSION OF PROGRESSIONS AND PROMOTIONS

Year	Career lengthening only	Only reduction of the starting salary	Only reduction of the replacement rate	Lengthening + starting salary	Lengthening + replacement rate	Starting salary + replacement fee	Lengthening + starting salary + restocking fee
2022	0,00	0,00	0,01	0,00	0,01	0,01	0,01
2023	0,00	0,01	0,02	0,01	0,02	0,02	0,02
2024	0,00	0,03	0,03	0,03	0,03	0,05	0,05
2025	0,00	0,04	0,06	0,05	0,06	0,09	0,09
2026	0,00	0,07	0,09	0,07	0,09	0,13	0,13
2027	0,01	0,10	0,13	0,11	0,14	0,19	0,20
2028	0,01	0,14	0,19	0,15	0,19	0,27	0,28
2029	0,02	0,19	0,25	0,20	0,26	0,36	0,37
2030	0,03	0,25	0,33	0,27	0,35	0,48	0,49
2031	0,04	0,32	0,42	0,34	0,45	0,61	0,63

Author's elaboration.

Note 1: only active civil servants.

Note 2: includes all the Branches.

A.1.9 Goiás

TABLE 23. ACCUMULATED SAVINGS UNDER EACH SET OF MEASURES - R$ BILLIONS 2020 - WITH ADMINISTRATIVE REFORM, WITHOUT SUSPENSION OF PROGRESSIONS AND PROMOTIONS

Year	Career lengthening only	Only reduction of the starting salary	Only reduction of the replacement rate	Lengthening + starting salary	Lengthening + replacement rate	Starting salary + replacement fee	Lengthening + starting salary + restocking fee
2022	0,00	0,01	0,02	0,01	0,02	0,03	0,03
2023	0,00	0,04	0,06	0,04	0,06	0,09	0,09

Year							
2024	0,00	0,09	0,12	0,09	0,12	0,18	0,18
2025	0,01	0,16	0,21	0,17	0,22	0,31	0,31
2026	0,01	0,25	0,34	0,26	0,35	0,49	0,49
2027	0,03	0,37	0,50	0,39	0,51	0,72	0,73
2028	0,05	0,52	0,69	0,55	0,72	1,01	1,02
2029	0,07	0,70	0,94	0,75	0,98	1,36	1,39
2030	0,11	0,92	1,23	1,00	1,30	1,79	1,83
2031	0,15	1,19	1,59	1,29	1,68	2,30	2,36

Author's elaboration.

Note 1: only active civil servants.

Note 2: includes all the Branches.

A.1.10 Maranhão

TABLE 24. ACCUMULATED SAVINGS UNDER EACH SET OF MEASURES - R$ BILLIONS 2020 - WITH ADMINISTRATIVE REFORM, WITHOUT SUSPENSION OF PROGRESSIONS AND PROMOTIONS

Year	Career lengthening only	Only reduction of the starting salary	Only reduction of the replacement rate	Lengthening + starting salary	Lengthening + replacement rate	Starting salary + replacement fee	Lengthening + starting salary + restocking fee
2022	0,00	0,03	0,04	0,03	0,04	0,06	0,06
2023	0,00	0,09	0,12	0,09	0,12	0,18	0,18
2024	0,01	0,19	0,25	0,19	0,25	0,36	0,36
2025	0,01	0,31	0,42	0,32	0,43	0,61	0,61
2026	0,03	0,47	0,63	0,49	0,65	0,91	0,93
2027	0,05	0,67	0,90	0,71	0,93	1,30	1,32
2028	0,09	0,91	1,22	0,97	1,27	1,77	1,81
2029	0,13	1,20	1,60	1,29	1,68	2,32	2,37
2030	0,19	1,53	2,04	1,66	2,16	2,96	3,04
2031	0,27	1,90	2,54	2,09	2,70	3,68	3,79

Author's elaboration.

Note 1: only active civil servants.

Note 2: includes all the Branches.

A.1.11 Mato Grosso

TABLE 25. ACCUMULATED SAVINGS UNDER EACH SET OF MEASURES - R$ BILLIONS 2020 - WITH ADMINISTRATIVE REFORM, WITHOUT SUSPENSION OF PROGRESSIONS AND PROMOTIONS

Year	Career lengthening only	Only reduction of the starting salary	Only reduction of the replacement rate	Lengthening + starting salary	Lengthening + replacement rate	Starting salary + replacement fee	Lengthening + starting salary + restocking fee
2022	0,00	0,00	0,01	0,00	0,01	0,01	0,01
2023	0,00	0,02	0,02	0,02	0,02	0,03	0,03
2024	0,00	0,03	0,04	0,03	0,04	0,06	0,06
2025	0,00	0,05	0,07	0,06	0,07	0,10	0,11
2026	0,01	0,08	0,11	0,09	0,12	0,16	0,17
2027	0,01	0,12	0,17	0,13	0,17	0,24	0,24
2028	0,02	0,17	0,23	0,18	0,24	0,34	0,34
2029	0,02	0,23	0,31	0,25	0,33	0,45	0,46
2030	0,04	0,31	0,41	0,33	0,43	0,60	0,61
2031	0,05	0,40	0,53	0,43	0,56	0,77	0,79

Author's elaboration.

Note 1: only active civil servants.

Note 2: includes all the Branches.

A.1.12 Mato Grosso do Sul

TABLE 26. ACCUMULATED SAVINGS UNDER EACH SET OF MEASURES - R$ BILLIONS 2020 - WITH ADMINISTRATIVE REFORM, WITHOUT SUSPENSION OF PROGRESSIONS AND PROMOTIONS

Year	Career lengthening only	Only reduction of the starting salary	Only reduction of the replacement rate	Lengthening + starting salary	Lengthening + replacement rate	Starting salary + replacement fee	Lengthening + starting salary + restocking fee
2022	0,00	0,01	0,01	0,01	0,01	0,02	0,02
2023	0,00	0,03	0,03	0,03	0,03	0,05	0,05
2024	0,00	0,05	0,07	0,05	0,07	0,10	0,10
2025	0,00	0,09	0,12	0,09	0,12	0,18	0,18
2026	0,01	0,14	0,19	0,15	0,20	0,28	0,28
2027	0,02	0,21	0,28	0,22	0,29	0,41	0,41
2028	0,03	0,29	0,39	0,31	0,41	0,57	0,58
2029	0,04	0,40	0,53	0,42	0,55	0,77	0,78
2030	0,06	0,52	0,69	0,56	0,73	1,01	1,03
2031	0,09	0,67	0,89	0,73	0,94	1,29	1,32

Author's elaboration.

Note 1: only active civil servants.

Note 2: includes all the Branches.

A.1.13 Minas Gerais

TABLE 27. ACCUMULATED SAVINGS UNDER EACH SET OF MEASURES - R$ BILLIONS 2020 - WITH ADMINISTRATIVE REFORM, WITHOUT SUSPENSION OF PROGRESSIONS AND PROMOTIONS

Year	Career lengthening only	Only reduction of the starting salary	Only reduction of the replacement rate	Lengthening + starting salary	Lengthening + replacement rate	Starting salary + replacement fee	Lengthening + starting salary + restocking fee
2022	0,00	0,02	0,03	0,02	0,03	0,04	0,04
2023	0,00	0,06	0,08	0,06	0,08	0,12	0,12
2024	0,00	0,12	0,16	0,13	0,17	0,24	0,24
2025	0,01	0,21	0,29	0,22	0,29	0,41	0,42
2026	0,02	0,33	0,45	0,35	0,46	0,65	0,65
2027	0,04	0,49	0,65	0,52	0,68	0,95	0,96
2028	0,06	0,69	0,92	0,73	0,95	1,33	1,36
2029	0,10	0,93	1,25	1,00	1,30	1,81	1,85
2030	0,14	1,23	1,65	1,33	1,73	2,39	2,45
2031	0,20	1,59	2,13	1,74	2,25	3,08	3,17

Author's elaboration.

Note 1: only active civil servants.

Note 2: includes all the Branches.

A.1.14 Pará

TABLE 28. ACCUMULATED SAVINGS UNDER EACH SET OF MEASURES - R$ BILLIONS 2020 - WITH ADMINISTRATIVE REFORM, WITHOUT SUSPENSION OF PROGRESSIONS AND PROMOTIONS

Year	Career lengthening only	Only reduction of the starting salary	Only reduction of the replacement rate	Lengthening + starting salary	Lengthening + replacement rate	Starting salary + replacement fee	Lengthening + starting salary + restocking fee
2022	0,00	0,02	0,03	0,02	0,03	0,05	0,05
2023	0,00	0,07	0,09	0,07	0,09	0,14	0,14
2024	0,00	0,14	0,19	0,15	0,19	0,28	0,28
2025	0,01	0,24	0,32	0,25	0,33	0,47	0,47
2026	0,02	0,37	0,49	0,38	0,50	0,71	0,72
2027	0,04	0,53	0,70	0,56	0,73	1,02	1,04
2028	0,07	0,72	0,96	0,77	1,00	1,39	1,42

Year							
2029	0,10	0,95	1,26	1,02	1,33	1,83	1,88
2030	0,15	1,21	1,62	1,32	1,71	2,35	2,41
2031	0,21	1,52	2,03	1,67	2,16	2,94	3,03

Author's elaboration.

Note 1: only active civil servants.

Note 2: includes all the Branches.

A.1.15 Paraíba

TABLE 29. ACCUMULATED SAVINGS UNDER EACH SET OF MEASURES - R$ BILLIONS 2020 - WITH ADMINISTRATIVE REFORM, WITHOUT SUSPENSION OF PROGRESSIONS AND PROMOTIONS

Year	Career lengthening only	Only reduction of the starting salary	Only reduction of the replacement rate	Lengthening + starting salary	Lengthening + replacement rate	Starting salary + replacement fee	Lengthening + starting salary + restocking fee
2022	0,00	0,01	0,01	0,01	0,01	0,01	0,01
2023	0,00	0,02	0,03	0,02	0,03	0,04	0,04
2024	0,00	0,05	0,06	0,05	0,06	0,09	0,09
2025	0,00	0,08	0,11	0,08	0,11	0,15	0,15
2026	0,01	0,12	0,16	0,13	0,17	0,23	0,24
2027	0,01	0,17	0,23	0,18	0,24	0,33	0,34
2028	0,02	0,24	0,32	0,25	0,33	0,46	0,47
2029	0,03	0,31	0,42	0,34	0,44	0,61	0,62
2030	0,05	0,40	0,54	0,44	0,57	0,78	0,80
2031	0,07	0,51	0,67	0,55	0,72	0,98	1,01

Author's elaboration.

Note 1: only active civil servants.

Note 2: includes all the Branches.

A.1.16 Paraná

TABLE 30. ACCUMULATED SAVINGS UNDER EACH SET OF MEASURES - R$ BILLIONS 2020 - WITH ADMINISTRATIVE REFORM, WITHOUT SUSPENSION OF PROGRESSIONS AND PROMOTIONS

Year	Career lengthening only	Only reduction of the starting salary	Only reduction of the replacement rate	Lengthening + starting salary	Lengthening + replacement rate	Starting salary + replacement fee	Lengthening + starting salary + restocking fee
2022	0,00	0,04	0,06	0,04	0,06	0,09	0,09
2023	0,00	0,14	0,18	0,14	0,18	0,27	0,27

2024	0,01	0,28	0,38	0,29	0,38	0,55	0,55
2025	0,02	0,48	0,65	0,50	0,66	0,94	0,95
2026	0,05	0,74	0,99	0,78	1,02	1,44	1,46
2027	0,08	1,08	1,44	1,13	1,49	2,08	2,12
2028	0,13	1,49	2,00	1,59	2,08	2,89	2,95
2029	0,21	2,00	2,68	2,15	2,80	3,88	3,97
2030	0,31	2,62	3,50	2,84	3,69	5,07	5,20
2031	0,44	3,35	4,48	3,66	4,75	6,48	6,67

Author's elaboration.

Note 1: only active civil servants.

Note 2: includes all the Branches.

A.1.17 Pernambuco

TABLE 31. ACCUMULATED SAVINGS UNDER EACH SET OF MEASURES - R$ BILLIONS 2020 - WITH ADMINISTRATIVE REFORM, WITHOUT SUSPENSION OF PROGRESSIONS AND PROMOTIONS

Year	Career lengthening only	Only reduction of the starting salary	Only reduction of the replacement rate	Lengthening + starting salary	Lengthening + replacement rate	Starting salary + replacement fee	Lengthening + starting salary + restocking fee
2022	0,00	0,02	0,02	0,02	0,02	0,03	0,03
2023	0,00	0,05	0,07	0,05	0,07	0,10	0,10
2024	0,00	0,10	0,14	0,10	0,14	0,20	0,20
2025	0,01	0,17	0,23	0,18	0,24	0,34	0,34
2026	0,02	0,27	0,35	0,28	0,36	0,51	0,52
2027	0,03	0,38	0,51	0,40	0,53	0,74	0,75
2028	0,05	0,53	0,70	0,56	0,73	1,02	1,04
2029	0,07	0,70	0,93	0,75	0,98	1,35	1,38
2030	0,11	0,90	1,20	0,98	1,27	1,74	1,79
2031	0,16	1,14	1,52	1,24	1,61	2,20	2,26

Author's elaboration.

Note 1: only active civil servants.

Note 2: includes all the Branches.

A.1.18 Piauí

TABLE 32. ACCUMULATED SAVINGS UNDER EACH SET OF MEASURES - R$ BILLIONS 2020 - WITH ADMINISTRATIVE REFORM, WITHOUT SUSPENSION OF PROGRESSIONS AND PROMOTIONS

Year	Career lengthening only	Only reduction of the starting salary	Only reduction of the replacement rate	Lengthening + starting salary	Lengthening + replacement rate	Starting salary + replacement fee	Lengthening + starting salary + restocking fee
2022	0,00	0,01	0,01	0,01	0,01	0,02	0,02
2023	0,00	0,03	0,04	0,03	0,04	0,05	0,05
2024	0,00	0,06	0,07	0,06	0,08	0,11	0,11
2025	0,00	0,09	0,12	0,10	0,13	0,18	0,18
2026	0,01	0,14	0,19	0,15	0,19	0,27	0,28
2027	0,02	0,20	0,27	0,21	0,28	0,39	0,40
2028	0,03	0,27	0,37	0,29	0,38	0,53	0,54
2029	0,04	0,36	0,48	0,39	0,51	0,70	0,71
2030	0,06	0,46	0,62	0,50	0,65	0,89	0,92
2031	0,08	0,58	0,77	0,64	0,82	1,12	1,16

Author's elaboration.

Note 1: only active civil servants.

Note 2: includes all the Branches.

A.1.19 Rio de Janeiro

TABLE 33. ACCUMULATED SAVINGS UNDER EACH SET OF MEASURES - R$ BILLIONS 2020 - WITH ADMINISTRATIVE REFORM, WITHOUT SUSPENSION OF PROGRESSIONS AND PROMOTIONS

Year	Career lengthening only	Only reduction of the starting salary	Only reduction of the replacement rate	Lengthening + starting salary	Lengthening + replacement rate	Starting salary + replacement fee	Lengthening + starting salary + restocking fee
2022	0,00	0,03	0,04	0,03	0,04	0,06	0,06
2023	0,00	0,10	0,14	0,10	0,14	0,20	0,20
2024	0,01	0,21	0,28	0,22	0,29	0,41	0,41
2025	0,02	0,36	0,48	0,37	0,49	0,70	0,71
2026	0,03	0,56	0,75	0,58	0,77	1,08	1,09
2027	0,06	0,81	1,08	0,85	1,12	1,56	1,59
2028	0,10	1,11	1,49	1,18	1,55	2,16	2,20
2029	0,16	1,48	1,99	1,59	2,08	2,87	2,94
2030	0,23	1,92	2,58	2,08	2,72	3,73	3,83
2031	0,33	2,44	3,27	2,66	3,47	4,73	4,86

Author's elaboration.

Note 1: only active civil servants.

Note 2: includes all the Branches.

A.1.20 Rio Grande do Norte

TABLE 34. ACCUMULATED SAVINGS UNDER EACH SET OF MEASURES - R$ BILLIONS 2020 - WITH ADMINISTRATIVE REFORM, WITHOUT SUSPENSION OF PROGRESSIONS AND PROMOTIONS

Year	Career lengthening only	Only reduction of the starting salary	Only reduction of the replacement rate	Lengthening + starting salary	Lengthening + replacement rate	Starting salary + replacement fee	Lengthening + starting salary + restocking fee
2022	0,00	0,01	0,01	0,01	0,01	0,01	0,01
2023	0,00	0,02	0,03	0,02	0,03	0,04	0,04
2024	0,00	0,04	0,06	0,04	0,06	0,08	0,08
2025	0,00	0,07	0,10	0,08	0,10	0,14	0,14
2026	0,01	0,11	0,15	0,12	0,16	0,22	0,22
2027	0,01	0,17	0,22	0,18	0,23	0,32	0,33
2028	0,02	0,23	0,31	0,25	0,32	0,45	0,46
2029	0,03	0,32	0,42	0,34	0,44	0,61	0,63
2030	0,05	0,42	0,56	0,45	0,59	0,81	0,83
2031	0,07	0,54	0,72	0,59	0,76	1,05	1,08

Author's elaboration.

Note 1: only active civil servants.

Note 2: includes all the Branches.

A.1.21 Rio Grande do Sul

TABLE 35. ACCUMULATED SAVINGS UNDER EACH SET OF MEASURES - R$ BILLIONS 2020 - WITH ADMINISTRATIVE REFORM, WITHOUT SUSPENSION OF PROGRESSIONS AND PROMOTIONS

Year	Career lengthening only	Only reduction of the starting salary	Only reduction of the replacement rate	Lengthening + starting salary	Lengthening + replacement rate	Starting salary + replacement fee	Lengthening + starting salary + restocking fee
2022	0,00	0,02	0,03	0,02	0,03	0,05	0,05
2023	0,00	0,07	0,10	0,07	0,10	0,14	0,14
2024	0,00	0,15	0,20	0,16	0,21	0,30	0,30
2025	0,01	0,27	0,35	0,27	0,36	0,51	0,52
2026	0,02	0,42	0,56	0,43	0,57	0,81	0,82
2027	0,05	0,62	0,82	0,65	0,85	1,19	1,21
2028	0,08	0,87	1,16	0,92	1,20	1,68	1,71

2029	0,12	1,18	1,57	1,26	1,64	2,27	2,32
2030	0,18	1,55	2,07	1,67	2,17	3,00	3,07
2031	0,26	1,99	2,66	2,17	2,82	3,86	3,96

Author's elaboration.

Note 1: only active civil servants.

Note 2: includes all the Branches.

A.1.22 Rondônia

TABLE 36. ACCUMULATED SAVINGS UNDER EACH SET OF MEASURES - R$ BILLIONS 2020 - WITH ADMINISTRATIVE REFORM, WITHOUT SUSPENSION OF PROGRESSIONS AND PROMOTIONS

Year	Career lengthening only	Only reduction of the starting salary	Only reduction of the replacement rate	Lengthening + starting salary	Lengthening + replacement rate	Starting salary + replacement fee	Lengthening + starting salary + restocking fee
2022	0,00	0,01	0,01	0,01	0,01	0,01	0,01
2023	0,00	0,02	0,02	0,02	0,02	0,03	0,03
2024	0,00	0,03	0,05	0,03	0,05	0,07	0,07
2025	0,00	0,06	0,08	0,06	0,08	0,11	0,11
2026	0,01	0,09	0,12	0,09	0,12	0,17	0,18
2027	0,01	0,13	0,17	0,14	0,18	0,25	0,26
2028	0,02	0,18	0,24	0,19	0,25	0,35	0,35
2029	0,03	0,24	0,32	0,26	0,33	0,46	0,47
2030	0,04	0,31	0,42	0,34	0,44	0,60	0,62
2031	0,05	0,39	0,53	0,43	0,56	0,76	0,79

Author's elaboration.

Note 1: only active civil servants.

Note 2: includes all the Branches.

A.1.23 Roraima

TABLE37. ACCUMULATED SAVINGS UNDER EACH SET OF MEASURES - R$ BILLIONS 2020 - WITH ADMINISTRATIVE REFORM, WITHOUT SUSPENSION OF PROGRESSIONS AND PROMOTIONS

Year	Career lengthening only	Only reduction of the starting salary	Only reduction of the replacement rate	Lengthening + starting salary	Lengthening + replacement rate	Starting salary + replacement fee	Lengthening + starting salary + restocking fee
2022	0,00	0,00	0,00	0,00	0,00	0,00	0,00
2023	0,00	0,00	0,01	0,00	0,01	0,01	0,01

2024	0,00	0,01	0,01	0,01	0,01	0,02	0,02
2025	0,00	0,02	0,02	0,02	0,02	0,03	0,03
2026	0,00	0,03	0,03	0,03	0,03	0,05	0,05
2027	0,00	0,04	0,05	0,04	0,05	0,07	0,07
2028	0,00	0,05	0,07	0,06	0,07	0,10	0,10
2029	0,01	0,07	0,09	0,08	0,10	0,14	0,14
2030	0,01	0,09	0,12	0,10	0,13	0,18	0,19
2031	0,02	0,12	0,16	0,13	0,17	0,23	0,24

Author's elaboration.

Note 1: only active civil servants.

Note 2: includes all the Branches.

A.1.24 Santa Catarina

TABLE 38. ACCUMULATED SAVINGS UNDER EACH SET OF MEASURES - R$ BILLIONS 2020 - WITH ADMINISTRATIVE REFORM, WITHOUT SUSPENSION OF PROGRESSIONS AND PROMOTIONS

Year	Career lengthening only	Only reduction of the starting salary	Only reduction of the replacement rate	Lengthening + starting salary	Lengthening + replacement rate	Starting salary + replacement fee	Lengthening + starting salary + restocking fee
2022	0,00	0,01	0,01	0,01	0,01	0,02	0,02
2023	0,00	0,03	0,04	0,03	0,04	0,06	0,06
2024	0,00	0,07	0,09	0,07	0,09	0,13	0,13
2025	0,01	0,12	0,16	0,12	0,16	0,23	0,23
2026	0,01	0,18	0,24	0,19	0,25	0,35	0,36
2027	0,02	0,27	0,36	0,28	0,37	0,52	0,53
2028	0,03	0,38	0,51	0,41	0,53	0,74	0,75
2029	0,05	0,52	0,69	0,56	0,73	1,01	1,03
2030	0,08	0,69	0,92	0,74	0,97	1,33	1,37
2031	0,11	0,89	1,19	0,97	1,26	1,72	1,77

Author's elaboration.

Note 1: only active civil servants.

Note 2: includes all the Branches.

A.1.25 São Paulo

TABLE 39. ACCUMULATED SAVINGS UNDER EACH SET OF MEASURES - R$ BILLIONS 2020 - WITH ADMINISTRATIVE REFORM, WITHOUT SUSPENSION OF PROGRESSIONS AND PROMOTIONS

Year	Career lengthening only	Only reduction of the starting salary	Only reduction of the replacement rate	Lengthening + starting salary	Lengthening + replacement rate	Starting salary + replacement fee	Lengthening + starting salary + restocking fee
2022	0,00	0,10	0,14	0,10	0,14	0,20	0,20
2023	0,00	0,32	0,42	0,32	0,42	0,61	0,61
2024	0,02	0,66	0,88	0,67	0,89	1,27	1,28
2025	0,05	1,14	1,52	1,17	1,55	2,20	2,22
2026	0,11	1,76	2,35	1,83	2,41	3,40	3,45
2027	0,19	2,56	3,42	2,69	3,54	4,96	5,04
2028	0,32	3,56	4,76	3,78	4,95	6,89	7,02
2029	0,49	4,77	6,38	5,12	6,68	9,24	9,45
2030	0,73	6,23	8,34	6,75	8,78	12,07	12,38
2031	1,05	7,96	10,66	8,69	11,29	15,42	15,86

Author's elaboration.

Note 1: only active civil servants.

Note 2: includes all the Branches.

A.1.26 Sergipe

TABLE 40. ACCUMULATED SAVINGS UNDER EACH SET OF MEASURES - R$ BILLIONS 2020 - WITH ADMINISTRATIVE REFORM, WITHOUT SUSPENSION OF PROGRESSIONS AND PROMOTIONS

Year	Career lengthening only	Only reduction of the starting salary	Only reduction of the replacement rate	Lengthening + starting salary	Lengthening + replacement rate	Starting salary + replacement fee	Lengthening + starting salary + restocking fee
2022	0,00	0,00	0,01	0,00	0,01	0,01	0,01
2023	0,00	0,01	0,02	0,01	0,02	0,02	0,02
2024	0,00	0,02	0,03	0,03	0,03	0,05	0,05
2025	0,00	0,04	0,06	0,04	0,06	0,08	0,08
2026	0,00	0,07	0,09	0,07	0,09	0,13	0,13
2027	0,01	0,10	0,13	0,10	0,13	0,19	0,19
2028	0,01	0,14	0,18	0,15	0,19	0,27	0,27
2029	0,02	0,19	0,25	0,20	0,26	0,37	0,37
2030	0,03	0,25	0,34	0,27	0,35	0,49	0,50
2031	0,04	0,33	0,44	0,36	0,46	0,63	0,65

Author's elaboration.

Note 1: only active civil servants.

Note 2: includes all the Branches.

A.1.27 Tocantins

TABLE 41. ACCUMULATED SAVINGS UNDER EACH SET OF MEASURES - R$ BILLIONS 2020 - WITH ADMINISTRATIVE REFORM, WITHOUT SUSPENSION OF PROGRESSIONS AND PROMOTIONS

Year	Career lengthening only	Only reduction of the starting salary	Only reduction of the replacement rate	Lengthening + starting salary	Lengthening + replacement rate	Starting salary + replacement fee	Lengthening + starting salary + restocking fee
2022	0,00	0,00	0,00	0,00	0,00	0,01	0,01
2023	0,00	0,01	0,02	0,01	0,02	0,02	0,02
2024	0,00	0,02	0,03	0,03	0,03	0,05	0,05
2025	0,00	0,04	0,06	0,04	0,06	0,08	0,08
2026	0,00	0,07	0,09	0,07	0,09	0,13	0,13
2027	0,01	0,10	0,14	0,11	0,14	0,20	0,20
2028	0,01	0,14	0,19	0,15	0,20	0,28	0,28
2029	0,02	0,20	0,26	0,21	0,28	0,38	0,39
2030	0,03	0,26	0,35	0,28	0,37	0,51	0,52
2031	0,04	0,34	0,46	0,37	0,48	0,66	0,68

Author's elaboration.

Note 1: only active civil servants.

Note 2: includes all the Branches.