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REVOLUTION OR TAX CHALLENGE? THE IMPACT OF ROTA 2030 ON THE TAX TRANSFORMATION OF AUTO PARTS MANUFACTURERS

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ABSTRACT

This article investigates whether participation in the Rota 2030 Mobility and Logistics Program results in materially relevant tax gains for auto parts manufacturers, taking as its object of study a company from the state of São Paulo taxed under the Actual Profit regime. The research question is: does the deduction of up to 30 percent on Research and Development (R&D) expenditures effectively reduce the Corporate Income Tax (IRPJ) and Social Contribution on Net Profit (CSLL) burden and improve the organization's tax planning? To address this question, a single, exploratory, and quantitative case study was conducted. Internal documents (general ledgers, R&D reports, qualification forms) for fiscal year 2022 were analyzed in Excel and compared with the relevant legislation (Law 13,755/2018; Decree 9,557/2018). The tax calculation was performed with and without the incentive, measuring its impact on the tax base and on profitability indicators. The results show that an investment of BRL 9.41 million in R&D generated a tax deduction of BRL 2.82 million, saving BRL 0.96 million in IRPJ and CSLL, an effective reduction of 30 percent, and increasing the return on capital invested in innovation to 10.2 percent. The study highlights that such benefits depend on rigorous accounting control of projects, robust technical documentation, and alignment between the tax department and engineering teams, all of which are essential elements of structured tax planning. It is concluded that, when properly managed, Rota 2030 operates as both an instrument for fostering innovation and a mechanism for optimizing the tax burden in the auto parts sector, filling a gap in the literature by quantifying its practical effects.

Keywords: Tax incentives. Tax accounting. Automotive sector. R&D. Taxation.

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1 INTRODUCTION

Organizations seek tax incentives as a strategy to mitigate the high tax burden (Almeida and Santos, 2019; Rezende et al., 2019; Saac and Rezende, 2019). These incentives, characterized by the partial or total exemption of tax credits, aim to promote economic development in specific regions or sectors (Calderaro, 1973; Fazoli et al., 2018). Previous studies have investigated tax incentives designed to reduce taxes, such as the Tax Recovery Program (Refis), Corporate Income Tax (IRPJ), and Social Contribution on Net Profit (CSLL), with a predominant focus on the public sector (Fazoli et al., 2018; Turini and Raupp, 2024), although the automotive sector is also a beneficiary of such incentives.

The Brazilian automotive industry was established in the early twentieth century with the installation of foreign plants using the CKD model ("completely knocked down"). Initially protected by market reserve policies, domestic companies prospered under international control. In the 1980s and 1990s, the sector expanded with the consolidation of the Southern Common Market (Mercosur) and the support of tax incentives, which increased consumer demand and strengthened the industry (Dulci, 2021). Beginning in 2003, vehicle production grew significantly, but the 2015 economic crisis interrupted this trend, requiring new tax incentives to stabilize the sector (Daudt and Willcox, 2018) and reinforcing the need for innovation in Research and Development (R&D) in industries operating in developing countries (Pelegrina et al., 2023). In response to the crisis, the Federal Government implemented public policies to improve the global competitiveness of the automotive sector, such as the Inovar-Auto Program.

The Inovar-Auto Program, established by Law No. 12,715/2012, aimed to strengthen the competitiveness of the sector by promoting investments in Research and Development (R&D), improvements in energy efficiency, safety advancements, and reductions in environmental impact (Ministry of Development, Industry, Trade and Services, 2020). After its conclusion in 2017, it was succeeded by the Rota 2030 Mobility and Logistics Program, created by Law No. 13,755/2018, which continued to promote innovation in the automotive industry. Rota 2030 offers progressive tax incentives, including reductions in the Tax on Industrialized Products (IPI), deductions for R&D expenditures used to reduce IRPJ and CSLL, and exemptions from Import Tax (II). However, only seventy-eight companies are currently qualified under the program, out of more than five hundred companies in the automotive sector, according to the National Association of Motor Vehicle Manufacturers (Anfavea, 2023). Program outcomes in 2020 were negatively affected by the Covid-19 pandemic, which caused a 31.6 percent decline in vehicle production, a 26.2 percent reduction in domestic sales, and a 25.2 percent decrease in external sales (Anfavea, 2021). Due to Covid-19, social isolation measures were implemented to safeguard the population, the economy contracted, only essential activities continued to operate, and companies faced revenue declines and order cancellations (Gullo, 2020).

Participation in Rota 2030 faces important challenges. Companies must assess whether the incentives offered justify the required investments. Economic instability, along with legal requirements for documentation and the risks of losing benefits, raises questions about the program's viability for many companies. Given the economic uncertainties and tax complexities faced by the automotive sector, particularly by auto parts manufacturers, this study seeks to answer the following question: Does participation in the Rota 2030 Mobility and Logistics Program provide significant tax benefits for companies in the auto parts sector in the current Brazilian automotive market? The general objective of this study is to analyze the tax benefits resulting from participation in the Rota 2030 Mobility and Logistics Program for auto parts manufacturers, considering the specific characteristics of the current Brazilian automotive market. To achieve this objective, the study establishes the following specific goals: to present the historical context of the Rota 2030 Program within the Brazilian automotive sector, highlighting its origins and transformations; to describe the stages of the tax calculation related to program adherence,

focusing on Corporate Income Tax (IRPJ) and Social Contribution on Net Profit (CSLL); to identify the fiscal and financial advantages offered to auto parts companies through Rota 2030; and to compare the calculation of IRPJ and CSLL under the Actual Profit regime with and without the program's tax incentives, demonstrating the direct impact of participation.

This study contributes to both academia and corporate practice, with emphasis on its functional application for tax professionals. By comparing scenarios with and without the Rota 2030 tax incentives, the study offers detailed and applicable perspectives that can support decision-making on program participation, since prior studies have been primarily theoretical (Pelegrina et al., 2023). Furthermore, it provides a comprehensive view of tax incentives, contributing to a critical analysis of government policies directed at the automotive industry, particularly the auto parts segment. By identifying the program's tax benefits, the study helps companies in the automotive sector evaluate the cost-benefit relationship of participation in Rota 2030. facilitating strategic long-term decisions. By exploring the nuances of tax issues related to the program, this work also provides a solid foundation for future academic studies and for public policies aimed at the development of the automotive sector, enriching the broader debate on the effectiveness of tax incentives in Brazil.

2 THEORETICAL FRAMEWORK

The Rota 2030 Program, established by Law No. 13,755 of December 10. 2018, was developed as the successor to the Inovar-Auto Program, which ended on December 31. 2017. Unlike its predecessor, Rota 2030 encompasses the entire automotive supply chain, covering auto parts manufacturers, vehicle manufacturers, and importers, rather than being limited solely to assemblers (MDIC, 2023a). To achieve its objectives, the first cycle of the Rota 2030 Program, which began on December 1. 2018 and remained in effect until November 30. 2023, was based on the guidelines established by Decree No. 9,557/2018. These guidelines include integrating the national automotive industry into the global market, automating industrial production processes to increase sector productivity, increasing investments in Research and Development (R&D) to allow companies to keep pace with international market trends, and implementing new technologies that meet energy efficiency requirements, reduce environmental impact, or use alternative materials for this purpose. Despite the qualification requirements of Rota 2030. companies may join the program through one of the available modalities, as shown in Table 1:

Table 1
Modalities for qualification under Rota 2030

Modality	Legal Basis
Manufacturers of vehicles classified in the groups of the TIPI (Tax on Industrialized Products Table) listed in Annex I of Decree No. 9,557/2018.	Article 13, section I, item a, of Decree No. 9,557/2018.
Manufacturers of auto parts or strategic production systems for vehicles classified under the TIPI codes mentioned in Annex I of Decree No. 9,557/2018 that have a technological project developed and approved to begin producing new products or improved versions of existing products in the country, or that have developed new strategic methods for mobility and logistics in the automotive sector.	Article 13, section I, item b, of Decree No. 9,557/2018.
Companies that have technological projects for the installation of new plants or investment projects, in compliance with the requirements set forth in Article 9, paragraph three, of Law No. 13,755/2018	Article 13, paragraph one, of Decree No. 9,557/2018.

Source: Decree No. 9,557 of November 8, 2018.

Additionally, in order to obtain approval for participation in the program, it is imperative to meet the requirements set forth in Article 15 of Decree No. 9,557/2018, as presented in Table 2:

Table 2
Requirements for qualification under Rota 2030

Requirements	Legal Basis
1 - Be in good standing with regard to federal taxes.	Article 15, section I, of Decree No. 9,557/2018.
2 - Commit to incurring Research and Development expenditures by applying the annual percentages defined in Annex XI of Decree No. 9,557/2018 to the gross revenue from goods and services related to the list of automotive products or to the gross revenue associated with strategic solutions.	Article 15, section II, of Decree No. 9,557/2018.

Source: Decree No. 9,557 of November 8, 2018.

The requirements presented must comply with the percentages set forth in Annex XI of Decree No. 9,557/2018. The application for qualification under the Rota 2030 Program must be submitted for evaluation and approval, followed by the publication of an ordinance by the Minister of the Ministry of Development, Industry, Trade and Services (MDIC) in the Federal Official Gazette. This ordinance will define the modality, responsibilities, and rights of the company, as well as the validity period of the incentive. After obtaining qualification and meeting the legal requirements, the company becomes eligible to benefit from the tax incentives made available by the Federal Government, as established in Articles 11 and 20 of Law No. 13,755/2018. The deduction from IRPJ and CSLL will be calculated on up to 30 percent of expenditures incurred in the country on Research and Development (R&D), with a return of 10.2 percent for general eligible expenditures and 12.5 percent for strategic ones. The regime for non-produced auto parts is a special regime that grants exemption from Import Tax for auto parts with no equivalent domestic production, provided that importing companies invest two percent of the customs value in R&D projects (Law No. 13,755/2018).

Regarding the concept and application of eligible expenditures mentioned in Articles 11 and 15 of Decree No. 9,557/2018, the Federal Government specifies in Articles 22 and 23 of the regulatory decree that eligible expenditures must be related to research focused on new solutions, improvements to existing solutions, experimental research, or expansion of infrastructure, as well as the development of new products or solutions aimed at enabling new applications. Eligible expenditures also include costs incurred for supplier training and development through certification, training programs, undergraduate and graduate education, among others. Moreover, expenditures must be incurred within the country, since those incurred abroad are not computed for the tax benefit.

If the expenditures are indirect, the Federal Government allows eligibility provided they are carried out through contracting suppliers, specialized companies, universities, or scientific, technological, and innovation institutions, or through direct investment in R&D under priority programs conducted in partnership with Science and Technology Institutes (ICTs) or institutions recognized by the government, such as the National Service for Industrial Training (Senai), the Funding Authority for Studies and Projects (Finep), and the Research Development Foundation (Fundep), which supports the Federal University of Minas Gerais (UFMG), among others.

It is important to highlight that specific criteria exist for each category of company seeking qualification under Rota 2030. In the case of vehicle manufacturers, compliance with the requirements established in Article 1 of Law No. 13,755/2018 is also required, which governs authorization for the commercialization and importation of vehicles as well as the provision of technical assistance services. Conversely, Article 9, paragraph four, of Law No. 13,755/2018 establishes additional requirements for companies dedicated to the manufacture of auto parts or strategic solutions, which include being taxed under the Actual Profit regime and maintaining a cost center specifically dedicated to research, development, and innovation.

3 METHODOLOGICAL PROCEDURES

This study was based on a case study research strategy aimed at examining the tax benefits arising from participation in the Rota 2030 Mobility and Logistics Program for auto parts manufacturers, considering the specific characteristics of the current Brazilian automotive market. A theoretical review was initially conducted to provide historical context for the Rota 2030 Program within the national automotive sector, highlighting its origins and transformations. Subsequently, the stages of the tax calculation related to program adherence were described, with emphasis on Corporate Income Tax (IRPJ) and Social Contribution on Net Profit (CSLL), including the identification of the tax and financial benefits available to auto parts companies through the Non-Produced Auto Parts Regime (Law No. 13,755/2018; MDIC, 2023b) and the fiscal deduction incentives for investments in Research and Development (R&D) set forth in Article 19 of Decree No. 9,557/2018.

Accordingly, this study is characterized as exploratory research, whose main purpose is to provide an initial understanding of a problem or phenomenon that has been insufficiently investigated or understood (Raupp and Beuren, 2006), such as participation in the program. Regarding the research approach, it is classified as quantitative because it requires measuring and objectively analyzing the fiscal and financial impacts resulting from program participation. A systematic analysis of real numerical data was therefore conducted through document examination using Excel (Raupp and Beuren, 2006; Oliveira, 2007).

The case study focuses on a company in the industrial sector located in the state of São Paulo whose primary activity is the production of auto parts. Data collection took place between December 2022 and August 2023, considering the 2022 calendar year as the analytical base. The documents examined included the report for classifying R&D projects and guidelines for completing technical descriptions, general ledgers with expenditures classified by account and cost center, and forms for qualification and verification of compliance with program requirements. The base year for analysis is 2022, the only fiscal year closed at the time of data collection (December 2022 to August 2023), and the original absolute values were used. A preliminary calculation for 2023 is presented solely to illustrate the assessment procedure and does not influence the quantitative conclusions.

4 ANALYSIS AND DISCUSSION OF RESULTS

To participate in Rota 2030. the company must commit to incurring R&D expenditures by applying the annual percentages defined in Annex XI of the regulatory decree to the total gross revenue from goods and services related to the list of automotive products or to the gross revenue associated with strategic solutions. The percentages in Annex XI of Decree No. 9,557/2018 are those presented in Table 3:

Table 3
Minimum percentage per calendar year

Minimum percentage for the calendar year	2018	2019	2020	2021	2022	2023
Revenue from the manufacture or importation of light vehicles	0.50%	0.70%	0.85%	1.00%	1.20%	1.20%
Revenue from the manufacture or importation of heavy vehicles	0.25%	0.40%	0.50%	0.60%	0.75%	0.75%
Revenue from the manufacture or importation of auto parts, strategic systems, or mobility and logistics solutions	0.50%	0.70%	0.85%	1.00%	1.20%	1.20%

Source: Annex XI of Decree No. 9,557 of November 8, 2018.

To assess whether the company met the annual targets established in Article 15, item II of

Decree No. 9. Under Decree No. 9,557/2018, the company's tax professionals, together with the teams responsible for the R&D projects, projected the entire period of the first cycle of the program (2018–2023). The projection applied the minimum percentages required in Annex XI of the decree (already summarized in Table 3) to the estimated gross revenue for each fiscal year. These same percentages were then used to calculate the absolute amounts that must be invested each year. Table 4 presents the projected values and the criteria adopted for the analysis. This procedure made it possible to standardize the estimation of the feasibility of joining or remaining in Rota 2030.

Table 4

Projected investment (R$)

Projected Investment (R$)	2018	2019	2020	2021	2022	2023
[A] Projected Total Gross Revenue	5.550.000	5.577.750	5.605.500	5.633.250	5.661.000	5.688.750
Nominal growth applied	-	+0.5 %	+0.5 %	+0.5 %	+0.5 %	+0.5 %
[B] Minimum Percentage for the Year	0.50%	0.70%	0.85%	1.00%	1.20%	1.20%
[C] Annual Target to Be Achieved	27.750	39.044	47.647	56.333	67.932	68.265
[D] Total Projected Expenditures	86.780	89.852	87.424	88.596	87.868	90.940
Research and Development Expenditures	54.380	54.652	54.924	55.196	55.468	55.740
Training and Supplier Development	-	-	-	-	-	-
Labor Expenditures	32.400	35.200	32.500	33.400	32.400	35.200
Result	Target Achieved	Target Achieved a	Target Achieved	Target Achieved	Target Achieved a	Target Achieved

Notes. * 2023 includes a projection for January to June, since the fiscal year had not yet closed at the time of data collection

[a] Historical average of expenditures on applied research and experimental development, adjusted by 0.5 percent per year.

[b] Compensation for technical hours allocated to the projects, increased by 9 percent in years of team expansion.

[A] Projected Total Gross Revenue: annual projections of the gross revenue associated with the sale of auto parts, without price-index adjustments; values extracted from the company's General Ledger and nominally adjusted by 0.5 percent per year.

[B] Minimum percentage required in Annex XI of Decree No. 9,557/2018.

[C] Annual R&D Investment Target (A × B).

[D] Total estimated eligible expenditures according to Articles 22 and 23 of Decree No. 9,557/2018.

Source: Research data.

The percentages applied in the calculation of the Rota 2030 Program are not fixed. Instead, they are individualized and established based on the Research and Development (R&D) investments made by the company. These investments are grounded not only in Decree No. 9,557/2018 but also in internal parameters (investment categories and company-specific targets) created to meet the program's requirements. These values may vary due to factors such as compliance with annual targets, variations in gross operating revenue, and the nature of the projects developed. According to the Annual Report of the Rota 2030 Mobility and Logistics Program, published by the Ministry of the Economy, R&D expenditures are calculated as a percentage of the company's Gross Operating Revenue (GOR), namely 0.50 percent for automobiles and light commercial vehicles and 0.25 percent for trucks and buses. Furthermore, compliance with annual energy efficiency and technological development targets directly influences the percentage of tax incentives granted to participating companies (Decree No. 9,557/2018).

If, at any point, the company fails to meet the target established for a given year, it must pay a compensatory contribution equivalent to 20 percent of that annual target by depositing the amount into a priority program account, as stipulated in Article 15, paragraph four, of Decree No.

9,557/2018. This contribution is allocated to a fund linked to priority programs, ensuring that, even in the event of noncompliance, the resources are directed toward the development of projects aligned with the objectives of the Rota 2030 Program.

In addition, one of the issues identified in this stage, which served as a decisive factor when considering participation in Rota 2030, was the analysis and reliability of revenue projections in the automotive sector, which has historically experienced periods of instability. When the company applied for qualification under Rota 2030, before the pandemic, available market growth projections were optimistic (Daudt and Willcox, 2018), forecasting a nine percent increase in vehicle production, reaching 3.14 million units, and an 11.4 percent increase in registrations, totaling 2.86 million (Anfavea, 2022). According to data released by Anfavea (2024), export volume increased by 48.3 percent in 2022 compared with 2020, and vehicle production rose by 17.7 percent over the same period.

Moreover, determining which departments could contribute to the process, identifying eligible projects, and assessing the time and commitment required from internal teams were crucial in this initial phase. Regarding corporate synergy, an essential aspect for the analyses under Rota 2030, the company sought to emphasize to the involved areas the strategic and operational importance of the program (Johann, 2017). This was necessary because part of the program's workflow included technical projects linked to Product Engineering, Manufacturing Engineering, and Quality departments. Thus, internal dependency relationships had to be established in a client-supplier dynamic since the successful implementation of the program required each responsible area to contribute according to its competencies and skills. In the automotive industry, innovative capacity is grounded in both specific and collective knowledge, requiring a more collaborative approach. This implies that the analysis of innovation activities depends not only on technical competence but also on the internal organization and effective integration between different areas of the company (Dias and Salerno, 2009).

After the initial analyses and the approval of the company's qualification through the publication of an ordinance in the Federal Official Gazette, the company became eligible to benefit from the tax incentive offered by the Federal Government. This incentive consists of the deduction of 30 percent of R&D expenditures in the calculation of IRPJ and CSLL, with a return of 10.2 percent for general eligible expenditures and 12.5 percent for strategic eligible expenditures. These specific percentages of 10.2 and 12.5 percent were determined internally by the company and are not explicitly stated in the decree. Eligibility refers directly to the requirements of the Rota 2030 Program. The projects deemed eligible and non-eligible by the company are presented below.

Three projects carried out by the company in 2022 were evaluated. Project 1, Product Design Enhancement, was classified as Applied Research (Article 22, II, Decree 9,557/2018) because it restructured the product design to reduce production costs. It is therefore eligible for Rota 2030. Project 2, Tonality Modification, was classified as Directed Basic Research (Article 22, I), as it involved analyzing, with bibliographic support, the impact of color changes on product durability. It is also eligible. Project 3, Predictive Maintenance of the Furnace, involved only the hiring of a standardized service to avoid operational failures and did not present technological advancement. For this reason, it was classified as non-eligible under the program.

Regarding the concept and application of eligible expenditures, the Federal Government established in Articles 22 and 23 of Decree No. 9,557/2018 that expenditures must be related to research focused on new solutions, improvements to existing solutions, experimental research, or infrastructure expansion, as well as the development of new products or solutions aimed at confirming the viability of new applications. Additionally, Silva (2018) explains that all technological innovation activities related to R&D involve creating products or processes with significant changes compared with those already available on the market. The company under analysis has a history of investing in R&D not only for internal improvements or market studies

but also to meet customer safety requirements. An example is the requalification of cylinders used to store Compressed Natural Gas (CNG), in which modifications were made to comply with the safety requirements established by Inmetro Ordinance No. 133/2022.

Furthermore, for eligibility under the program, expenditures related to supplier training and labor associated with employee hours spent on projects may also be included. If expenditures are incurred indirectly, the Federal Government allows eligibility provided they occur through the contracting of specialized companies, agreements with universities or scientific institutions, or direct investment in R&D through priority programs carried out in partnership with institutions recognized by the government, such as Senai, Finep, and Fundep (MDIC, 2023a).

After obtaining qualification under Rota 2030, the tax department began the stage of categorizing eligible projects for the program's benefit calculation. The department requested detailed data from the areas responsible for each project through the completion of technical reports, in accordance with the guidelines established by Decree No. 9,557/2018. These forms included essential information such as the project name, duration, activity status, technological challenges and risks, work methodologies, timeline, and achieved results. For precise eligibility assessment, each project was classified as a product, process, or service, and categorized into research activities (directed basic research, applied research, or structuring research) or development activities (development project, supplier training, or basic manufacturing).

For each R&D project, the company completes a standardized technical form that records: (i) project identification, dates, and status; (ii) classification as product, process, or service; (iii) legal classification as Directed Basic Research, Applied Research, Experimental Development, or Structuring Project (Article 22 of Decree 9,557/2018); (iv) classification as Development Project, Supplier Training, or Basic Manufacturing (Article 23); (v) indication of strategic project according to paragraph five of Article 11 of Law 13,755/2018; and (vi) technical details including objective, technological challenges, methodologies, timeline, and annual results. These records are required by the program to demonstrate the eligibility of expenditures and serve as documentary support for potential audits.

The reports containing technical descriptions were essential for a thorough and critical evaluation of eligible amounts because there are multiple interpretations of what constitutes a project or R&D-related expenditure. Although the Rota 2030 Program provides examples in its legal framework, companies naturally develop specific projects and research lines tailored to their operations, which creates significant uncertainty regarding the eligibility of expenditures. As Sordi (2017) notes, this represents a paradigm since all human thought generates results through inventive activities, and therefore any creative process could theoretically be considered eligible. However, as previously mentioned, for the purpose of expenditure analysis under Rota 2030, eligible R&D projects refer specifically to the creation of new technologies and knowledge related to automotive production and its components.

Furthermore, the report was also defined as a valuable tool for fulfilling future ancillary obligations related to Rota 2030. This detailed documentation provides an accurate record of R&D activities, ensuring transparency and the company's compliance with the program's requirements. At this stage, it is important that the company's internal documentation and auditing processes are properly structured and accurately reflect the data analyzed, helping prevent fraud and providing the necessary knowledge for informed decision-making (Catelli, 2001). After the first stage of identifying eligible projects, the tax professionals conducted the tracking of properly recorded tax documents, safeguarding them in case of potential audits. They also performed an analysis of the accounting records using the general ledger as a tool, categorizing entries by account and cost center related to R&D and incentivized projects, as illustrated in Table 5:

Table 5
Segregation of Research and Development Expenditures by project, accounting account, and cost center

Project 1 – Product Design Enhancement				
Accounting Account Code (Expense)	**Accounting Account Description**	**Cost Center Code**	**Cost Center Description**	**2022 Accounting Balance (BRL)**
62415	R&D Expenses – Product Engineering	7320	Research and Development Expenses	10.500
67328	Labor – Product Engineering	2167	Labor – Projects	7.840
			Eligible Expenditure:	**18.340**
Project 2 – Tonality Modification				
Accounting Account Code (Expense)	**Accounting Account Description**	**Cost Center Code**	**Cost Center Description**	**2022 Accounting Balance (BRL)**
60947	Test Engineering	7320	Research and Development Expenses	52.830
67328	Labor – Product Engineering	2167	Labor – Projects	22.940
			Eligible Expenditure:	**75.770**
Project 3 – Predictive Maintenance of the Furnace				
Accounting Account Code (Expense)	**Accounting Account Description**	**Cost Center Code**	**Cost Center Description**	**2022 Accounting Balance (BRL)**
67258	Contracted Professional Services	4783	Operational Expenses	52.830
			Non-Eligible Expenditure:	**52.830**

Source: Research data.

From this point onward, after analyzing all expenditures and the projects eligible under Rota 2030, the calculation of the tax benefit for IRPJ and CSLL deduction was carried out in accordance with Article 19 of Decree No. 9,557/2018, as shown in Table 6:

Table 6
Calculation of the effective benefit to be deducted

Rota 2030 Benefit	**(BRL) in 2022**
[A] R&D Expenditure	9.411.000
[B] Deductible Benefit (30 percent) – Article 19 of Decree No. 9,557/2018	2.823.300
[C] IRPJ/CSLL Tax Rate	34%
[D] Effective Benefit	959.922
[E] Percentage Incentive	10.2%

Note.
[A] = Annual R&D investment – Eligible Expenditures
[B] = [A × 30%]
[C] = 25% for IRPJ and 9% for CSLL
[D] = [B × C]
[E] = [D ÷ A]
Source: Research data.

Regarding the accounting recognition of the incentive, the Brazilian Accounting Pronouncements Committee (CPC, 2010), in CPC 07, which addresses Government Grants and Assistance, interprets Rota 2030 as a form of government grant. This understanding, supported by Adriano (2018), is based on the fact that, in order to qualify for the program, the company was required to comply with legal requirements related to its operational activity, whether past or future, in exchange for the economic benefit offered by the Federal Government.

According to item 12 of CPC 07, government grants must be recognized as income in the same period in which the expenses they are intended to compensate are incurred. In this case, the recognition should be aligned with the IRPJ and CSLL amounts calculated. Since these taxes are classified as expenses in the company's income statement, the effective value of the incentive must therefore be recorded as revenue. Accordingly, the accounting entry recognizing the benefit was made at the end of the 2022 calendar year, as presented in Table 7:

Table 7

Accounting entry for the rota 2030 benefit

Classification	Account Description	Amount (BRL) in 2022
Debit – Assets	Taxes Recoverable	959.922
Credit – Income	Revenue from R&D Incentives	959.922

Source: Research data.

According to Araújo et al. (2019), in addition to the tax benefit itself, the manner in which the fiscal incentive is recorded also contributes to positive variations in the company's profitability regarding the return on equity (ROE), calculated by dividing net income by shareholders' equity and multiplying by one hundred. This indicator reflects the net financial return generated by the company, demonstrating its ability to remunerate the capital invested by its shareholders (Diniz et al., 2020).

After identifying, calculating, and recording the Rota 2030 tax incentive, the IRPJ and CSLL were calculated under the Actual Profit regime for the 2022 calendar year. In addition to the deduction of the incentive from the taxes due, the program's legislation, in accordance with Article 19, paragraph seven, of Decree 9,557/2018, establishes that the value of the income recognized for accounting purposes must not be considered when calculating the taxable base for these taxes. This value is therefore excluded and has a neutral effect after being recorded as revenue in the company's income statement, as shown in Table 8:

Table 8

Comparison of IRPJ and CSLL calculation under the actual profit regime in the 2022 calendar year

IRPJ and CSLL – 2022 Calendar Year	Without Impact	Impact of Rota 2030	Variation
(+)Revenue Recognized from the Rota 2030 Benefit	0	959.922	959.922
Net Income	8.600.000	9.559.922	959.922
Temporary Additions (Provisions)	520.000	520.000	0
Permanent Additions	348.500	348.500	0
Other Additions	286.000	286.000	0
Total Additions	1.154.500	1.154.500	0
Temporary Exclusions (Provisions)	-458.000	-458.000	0
Other Exclusions	-156.000	-156.000	0
R&D Tax Incentives (Rota 2030)	0	-959.922	-959.922
Total Exclusions	-614.000	-1.573.922	-959.922
IRPJ and CSLL Tax Base	9.140.500	9.140.500	0

IRPJ 25%	2.285.125	2.285.125	0
(–) Rota 2030 Benefit (30%)	0	-685.537,5	-685.537,5
IRPJ Payable	2.285.125	1.599.587,5	-685.537,5
CSLL 9%	822.645	822.645	0
(-)Rota 2030 Benefit (30%)	0	-246.793,5	-246.793,5
CSLL Payable	822.645	575.851.5	-246.793,5

Source: Research data.

The analysis of the data revealed a positive variation resulting from the application of the Rota 2030 tax incentive, reflected in a considerable reduction in the IRPJ and CSLL amounts payable. The total decrease reached 30 percent, as shown in Table 9, which not only alleviated the company's tax burden but also contributed to strengthening its financial position.:

Table 9
Percentage of the benefit applied to the IRPJ amount payable

IRPJ and CSLL – 2022 Calendar Year	Without Rota 2030 Application	With Rota 2030 Application	Reduction by Variation (%)
IRPJ Payable	2.285.125	1.599.587,5	- 30
CSLL Payable	822.645	575.851.5	- 30
Total	3.107.770	2.175.439	- 30

Source: Research data.

Based on the data presented in Table 9, it is essential to highlight the importance of correctly recording the benefit obtained through the Rota 2030 Program. The amount recognized in the Income Statement for the Year must not be distributed as dividends, since the Brazilian Corporations Law requires that tax incentives be allocated to a Tax Incentive Reserve. In accordance with Article 195-A of Law 6,404/1976 and Article 19, paragraph seven, of Decree 9,557/2018, the transfer is carried out by resolution of the general meeting, debiting net income for the year (before calculating the mandatory dividend) and crediting the respective reserve within the "Profit Reserves" group. This procedure demonstrates the actual gain, preserves working capital, and prevents the tax benefit from being distributed to shareholders as dividends.

The adoption of this practice not only ensures accounting compliance but also promotes transparency in the company's financial statements by separating ordinary revenues from government grants or tax incentives (Law 6,404/1976). It is also consistent with the understanding of the Federal Supreme Court (STF) regarding tax incentives related to the State Value-Added Tax on Goods and Services (ICMS), which determines that exemption from taxation on profits depends on the correct accounting of the incentives (Súmula 544, 1969). Thus, implementing this method highlights the real impact of the Rota 2030 Program, reinforcing its relevance for the financial and strategic sustainability of participating companies.

Finally, given the increasing demand for solutions related to technological innovation, previous studies involving other organizations have also identified positive results for companies that sought to implement innovation practices and participate in technological incentive programs (Bornia et al., 2020; Bueno and Torkomian, 2014). According to the Institute for Applied Economic Research (IPEA, 2006), companies that implemented technological innovation initiatives have long experienced improvements in product quality, expansion of market presence, reduction of environmental impacts, and greater compliance with regulatory standards in both domestic and international markets, thereby driving industrial progress and global competitiveness.

Although the number of companies that effectively use the Rota 2030 tax benefit is relatively low, this phenomenon may be related to the requirements imposed by the legislation itself. One of the main requirements is the obligation to be in good standing with federal taxes, a condition that alone can limit the participation of many companies and highlights the significant regulatory barriers in the country (FINEP, 2020; Ministry of the Economy, 2019).

5 FINAL CONSIDERATIONS

The Rota 2030 Program represented a significant milestone for the Brazilian automotive sector by establishing clear guidelines for technological development, energy efficiency, and innovation. With the implementation of three five-year cycles, the first cycle (2018–2023) was still underway during the research period; nevertheless, partial reports from the MDIC (2023a) and internal data from the company studied indicate that the intermediate targets have been met, with positive effects on the automation and modernization of production processes. Compliance with fiscal requirements and commitment to the minimum investment percentages established by Decree No. 9,557/2018, combined with efficient coordination among departments, enabled the company to benefit from the available tax incentives, generating positive results both for its competitiveness and for the sector as a whole.

From a tax perspective, the study showed that participation in the program is advantageous for the company used in the case study, whose main activity is the manufacturing of auto parts. The incentive allowed for overall tax savings and fiscal regularization, since failure to comply with these requirements would have prevented the company from continuing to receive the benefit, thereby functioning as a mechanism of tax encouragement. Thus, the main objective of this research, which was to analyze the tax advantages resulting from participation in the Rota 2030 Mobility and Logistics Program for auto parts manufacturers, considering the specific characteristics of the current Brazilian automotive market, was explored through the evaluation of the tax benefits obtained by the company studied. Based on the data presented regarding the application of Rota 2030, the company obtained a 10.2 percent incentive return on its R&D expenditures, which directly contributed to reducing its tax burden. This benefit affected the taxes due, reducing the amounts of IRPJ and CSLL payable by 30 percent in the 2022 calendar year. Equally significant, although thought-provoking, the promotion of innovation is essential to enhance the competitiveness of organizations. Technological innovation is therefore regarded as the primary driver of change in the current context in which companies and the world operate. –

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CONFLICT OF INTERESTS

The authors declare that there is no conflict of interest regarding this submitted work.

AUTHOR CONTRIBUTIONS

Roles	1st author	2nd author
Conceptualization	♦	
Data Curation		♦
Formal Analysis	♦	♦
Funding Acquisition	Não possui	
Investigation	♦	♦
Methodology	♦	
Project Administration	♦	
Resources	♦	♦
Software		
Supervision	♦	
Validation	♦	
Visualization		
Writing – Original Draft		♦
Writing – Review and Editing	♦	