

Understanding the Need for Income Tax Incentives. A Case Study on the IT Sector in Romania

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Abstract. In 2023, the Romanian Government decided on the reduction and alignment of tax incentives for employees in the IT, construction, agriculture and food industry sectors. This paper aims to analyze the impact on these activity fields, with a focus on the IT sector. For this purpose, indicators such as number of employees, percentage in the total GDP and labor productivity were considered relevant and the data was processed using the regression analysis. Thus, the implementation of fiscal facilities had an overall positive impact on all industries in terms of employment, but not necessarily as a percentage of GDP. A strong, direct link between the increase in the mean salary in the IT industry and number of employees, labor productivity and percentage of GDP was determined, with a coefficient of multiple determination of over 90% for all three regression analyses. The elimination of benefits for the employees working in IT might have a negative impact on the sector which has become a main strategic resource for Romania, mainly because the possibility of working remotely can make companies easily relocate their IT departments.

Keywords: tax incentives, economic development, industry growth, IT sector, agriculture, constructions

Introduction

In September 2023, the Romanian Government proposed a series of fiscal measures to be implemented starting 1st of November 2023 and beginning of 2024, among which is the reduction and alignment of fiscal facilities for employees in the IT, construction, agriculture and food industry sectors. Thus, the draft law would state the following stipulations:

Limitation of personal income tax exemption for the IT sector.

The introduction of a threshold of 10,000 RON within which the exemption from the payment of the salary tax in the field of creating computer programs is granted. The exemption applies to a single employer/payer, for incomes up to 10,000 RON including obtained from salaries and assimilated to salaries made by the individual based on a single individual employment contract, service report, act of delegation or secondment or a special statute provided by law, based on the option expressed in writing by declaration on own responsibility to the employer, as the case may be. The part of the gross monthly income exceeding 10,000 RON does not benefit from tax incentives.

Limitation of personal income tax and health insurance contribution exemption for constructions, agriculture and food industry sectors

Application of tax incentives only for one individual employment contract, based on the option expressed, in writing, by self-declaration to the employer/payer, as appropriate.

Removal of the health insurance contribution exemption for persons carrying out activities in the constructions, agriculture and food industry sectors.

Elimination of the reduction of the labour insurance contribution rate and the exemption from the payment of social insurance contribution in the construction, agriculture and food industry sectors in the case of employees who carry out activities in special working conditions.

The scope of this paper is to analyze the impact of fiscal changes on the activity fields that benefited from tax incentives with a focus on the IT sector, considered to be one of the country's most dynamic and competitive industries. To achieve this, several objectives were established, starting with an overview of the existing income tax policies and incentives in Romania. Secondly,

the current economic landscape in Romania needs to be evaluated from the perspective of the legislative changes and the evolution of total gross domestic product. Furthermore, each sector is analyzed through the evolution of a system of indicators to determine if there is a direct correlation between the implementation of fiscal facilities and the overall economic welfare of these activity fields, with the main goal of proving the effectiveness of such initiatives in stimulating development and propose recommendations regarding the best practices that would encourage both employees and business owners.

While many studies highlighting the benefits of such fiscal facilities already exist, the end to tax exemptions is a new issue which offers cause for concern for both businesses and employees. Addressing this gap can provide a richer understanding of the impact that these measures had on the Romanian economy and what to expect in the future.

The study is structured as follows: the first section is related to the introspection of the literature in the field, followed by the research methodology. The results and discussion of the charts and regression analysis are presented next, the study ending with conclusions and references.

Literature review

Overview of tax incentives

The principles imposed by the state on each citizen represent the benefit of tomorrow's well-being. Fees and taxes constitute the direct procedures for managing a competitive economy, fiscal policy being called upon to establish the economic and social objectives to be achieved in the process of mobilizing and distributing resources.

The Cambridge Dictionary defines tax incentives as reductions in taxes that encourage companies or people to do something that will help the country's economy. Tax incentives are common around the world, especially in developing countries. A growing literature discusses their likely effects, including their benefits and risks (Klemm, Van Parys, 2009).

Different tax incentives are available to stimulate activities such as investment, job creation, research and development and sustainable business practices. Incentives also come in many forms, including tax holidays, property and sales tax abatements, activity-specific grants and job subsidies. Numerous countries around the world offer salary tax incentives to encourage certain activity fields and support the economy.

Bolnick (2004) has compiled a list of ten arguments in favor and against tax incentives, as pointed out below:

Table 1. Advantages and disadvantages of tax incentives

Advantages	Disadvantages
1. Higher profits	1. Revenue loss
2. Positive externalities	2. Revenue leakage through avoidance and evasion
3. Practicality	3. Impact on tax administration
4. Signaling	4. Economic cost of fiscal adjustment
5. Capital mobility	5. Economic distortion
6. Tax competition	6. Equity
7. Compensating for other deficiencies in the investment climate	7. Lack of transparency
8. Revenue gains	8. Political dynamics
9. Political cover	9. There are other instruments
10. Experience shows that incentives can work	10. Experience shows that tax incentives usually don't work

Source: Authors' own research contribution based on the data retrieved from Bolnick (2004).

To summarize his work, tax incentives offer benefits like stimulating investment, supporting specific sectors and enhancing competitiveness. At the same time, they can lead to revenue loss, create complexity and inequity and have potential for misuse while their effectiveness might also be uncertain.

Income tax laws in Romania

The Fiscal Code states the following tax and contribution rates applicable to salaries and incomes assimilated to salaries for Romanian tax residents:

Table 2. Taxes and contributions applicable to Romanian tax residents

	Tax	Formula
Employee contributions	Social insurance contribution	25% of gross salary
	Health insurance contribution	10% of gross salary
	Personal income tax	10% of (gross salary - social insurance contribution - health insurance contribution)
Employer contributions	Labour insurance contribution	2.25% of gross salary

Source: Authors' own research contribution based on the data retrieved from PricewaterhouseCoopers.

Romanian fiscal laws provided tax incentives for three fields of activity, particularly agriculture and food industry, constructions and IT with the aim of encouraging the population to stay in the country and attract workforce by reducing the tax and contributions the employees and employers must pay. Those benefits are summarized below:

Table 3. Tax incentives in Romania

Activity field Tax/contribution	Social insurance contribution	Health insurance contribution	Personal income tax	Labour insurance contribution
Agriculture and food industry	Reduced by 3,75%	Exempt	Exempt	Still applicable
Constructions	Reduced by 3,75%	Exempt	Exempt	Still applicable
Information Technology	Still applicable	Still applicable	Exempt	Still applicable

Source: Authors' own research contribution based on the data retrieved from Crowe (2023).

The implementation of tax incentives for the IT sector in Romania is one of the oldest Romanian fiscal facilities, having been introduced in the summer of 2001 as a result of a government ordinance stating that “the information technology sector represents a priority activity that is expected to be stimulated including through fiscal leverage”. It was clear back then that the IT sector is a strategic and developing resource for the country's economy which could benefit from the reduction of the personal income tax. Over the years, numerous political figures and economists have either applauded or contested the initiative.

The year 2019 brought important changes regarding the taxation of salary income for employees working in construction companies and the minimum wage (not including allowances, increments and other additions) was increased to 3,000 RON per month starting 2020.

The agriculture and food industry workers only benefited from the exemption of certain taxes starting June 2022. The law was of the measures provided in the "Support for Romania" program, among its goals which were the support of Romanian agriculture, both by implementing these tax reductions, but also by increasing the minimum wage to 3,000 RON.

Findings from existing literature show that the design and evaluation of tax incentives should be conducted taking into account country-specific conditions and priorities and while an incentive policy that might be desirable for one country could also be ineffective for another (Jun, 2017). A study by Piñeiro et al. (2020) suggests that direct economic benefits, increased productivity or profitability seem to be the essential conditions for the adoption of sustainable practices in the short term in the agricultural industry. Muruny's research (2021) reveals that tax incentives cause partial positive effects on financial performance of the listed construction firms in Kenya. Evidence from the Brazilian industry implies that on average, the productivity growth of foreign capital hardware manufacturers, while payroll tax reduction benefits were in force, was higher than in other periods (Duarte, 2016).

Methodology

In an effort to evaluate the impact that the implementation of tax incentives has had towards the economic growth, data was collected from multiple sources namely World Bank, Eurostat and the National Institute of Statistics and analyzed using EViews 12.

The research has a quantitative approach, focused on gathering numerical data and generalizing it to explain a particular phenomenon. Considering the fact that tax incentives in Romania for different activity fields were introduced at different points in time, each sector was analyzed individually in order to obtain accurate results regarding their influence on the Romanian economy. Data regarding the gross domestic product in the period of 2000-2022 was expressed in constant local currency, thus it was adjusted using a fixed exchange rate for the effects of price inflation. Data regarding the contribution of each sector to the total gross domestic product was calculated using the value added method for seasonally adjusted values. The number of employees for each activity field was calculated quarterly as an average of the effective number of employees at the end of the month. Labour productivity was determined by dividing the gross domestic product of the sector to the number of employees.

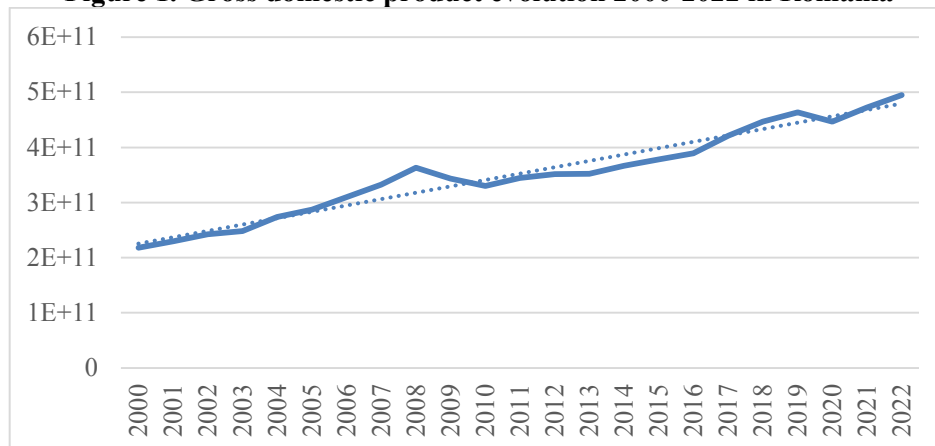
The focus of the study is on the IT sector, for which multiple models were used to analyze the relationship between an independent variable and three dependent variables. Therefore, the regression analysis was used to describe and evaluate how the mean salary affects the number of employees, labour productivity and the percentage of GDP represented by the IT sector.

The sample researched consists of quarterly data in the period starting from 2001 to the latest data available which is the third quarter of 2023, the hypothesis consisting in exposing the positive influence that an increase of salaries has over the number of employees, labour productivity and gross domestic product of the sector.

Results and discussions

1. Overall impact on the activity fields granted tax incentives

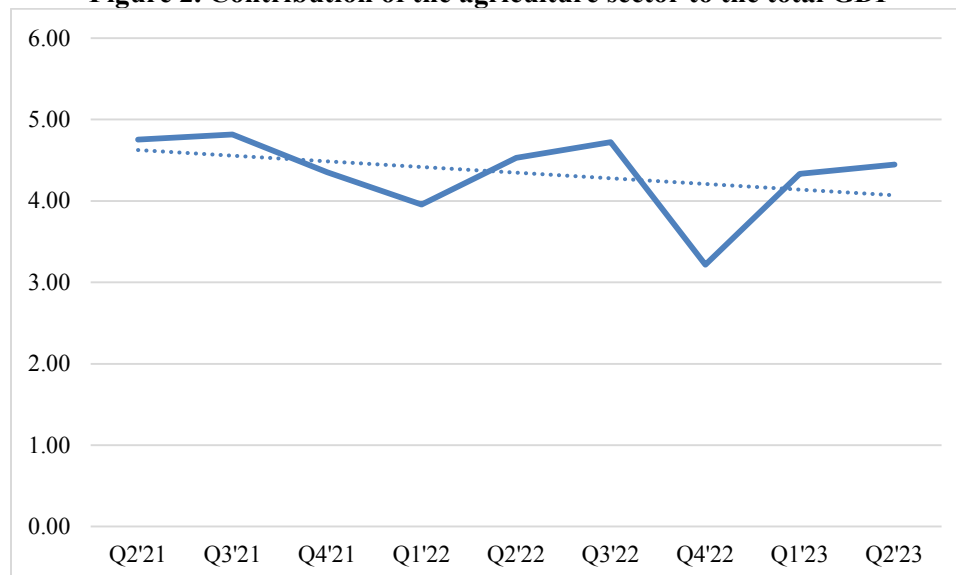
Figure 1. Gross domestic product evolution 2000-2022 in Romania



Source: Authors' own research contribution based on the data retrieved from WorldBank.

Romania's gross domestic product has fluctuated throughout the last 20 years while maintaining an ascending trend, with significant decreases only during the Global Financial Crisis in 2008-2009 and the COVID-19 Pandemic in 2020. Therefore, it is important to observe if the percentage of GDP attributed to the activity fields that were granted tax incentives has changed in any way before and after the period of time they were implemented. For this purpose, each sector was analyzed prior the introduction of fiscal facilities and in the period of time following.

Figure 2. Contribution of the agriculture sector to the total GDP

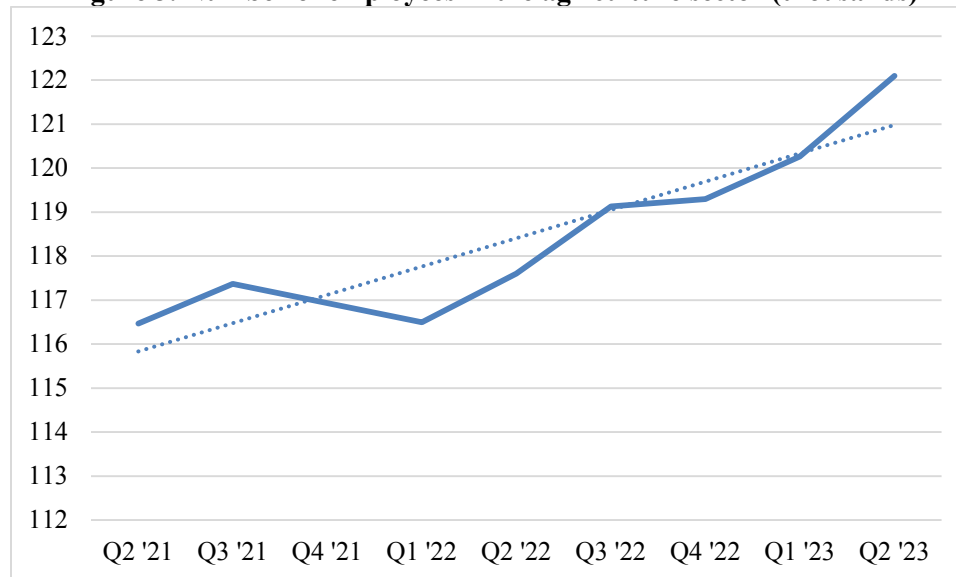


Source: Authors' own research contribution based on the data retrieved from National Institute of Statistics.

As outlined before, tax incentives for employees working in agriculture (including forestry and fishing) were implemented starting the second half of 2022, which led to an increase of 4.25% of its contribution to the total gross domestic product in the third quarter of the year. Following this rise, there was a drop by 31.90% in the last quarter of 2022, mostly caused by extreme weather conditions. Overall, the percentage of gross domestic product represented by agriculture declined

dramatically by 12.38% from 2021 to 2022. Ultimately, the latest data from the first two quarters of 2023 show a significant rise by 34.79%, respectively by 2.62%.

Figure 3. Number of employees in the agriculture sector (thousands)



Source: Authors' own research contribution based on the data retrieved from National Institute of Statistics.

The figure above illustrates an ascending trend regarding the number of employees in the agriculture sector in Romania, with a 0.77% increase in the third quarter of 2021, followed by two falls of 0.37% in the next two quarters. Starting 2022, employment growth rose sharply, by 0.94% until June and by 1.30% after the first quarter when the tax incentives have been implemented. Another considerable growth can be seen in January-March 2023, where the number of employees surged by 1.52%. Overall, there has been an important increase of 3.83% in agricultural employment, which can be attributed to the reduction of personal income taxes. 23% of Romanian labour force is employed in agriculture, which is the highest percentage in the European Union.

Table 4. Country rankings based on percentage of agricultural land in the European Union

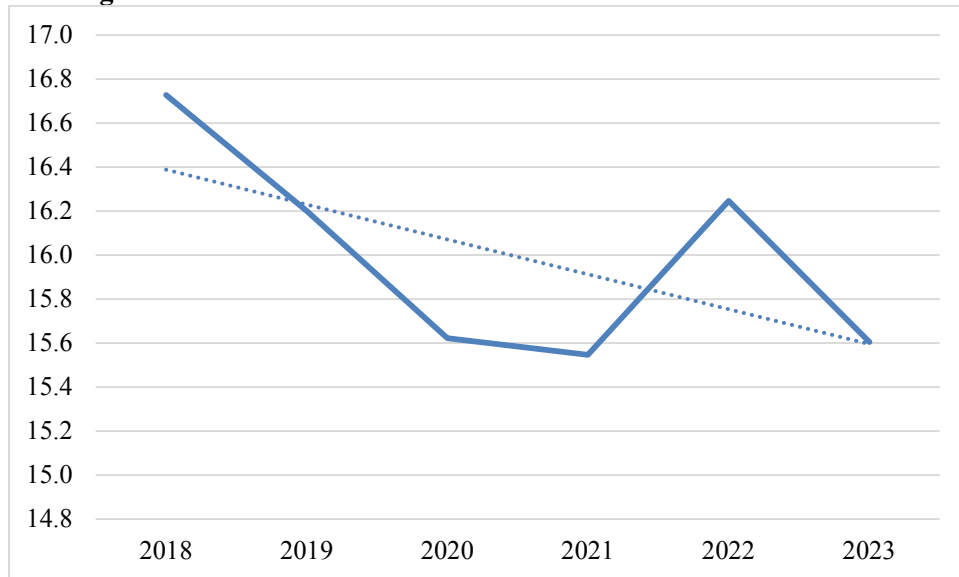
Countries	Percent agricultural land (2021)
Denmark	65.45
Ireland	62.96
Romania	56.85
Hungary	55.27
Netherlands	53.82

Source: Authors' own research contribution based on the data retrieved from The Global Economy.

Another argument in favor of granting tax incentives in the agriculture sector in Romania is its land potential, as the country ranks third based on the percentage of agricultural land in the European Union, with almost 13.5 million hectares (57% of the total area of the country).

Agriculture is a sensitive field, highly influenced by external factors, which could benefit from tax incentives as it promotes food security and rural development. In order to stabilize the sector, the reduction of taxes should be maintained over a longer period of time, as one year, also affected by the Russian aggression against Ukraine, is not sufficient to see an improvement.

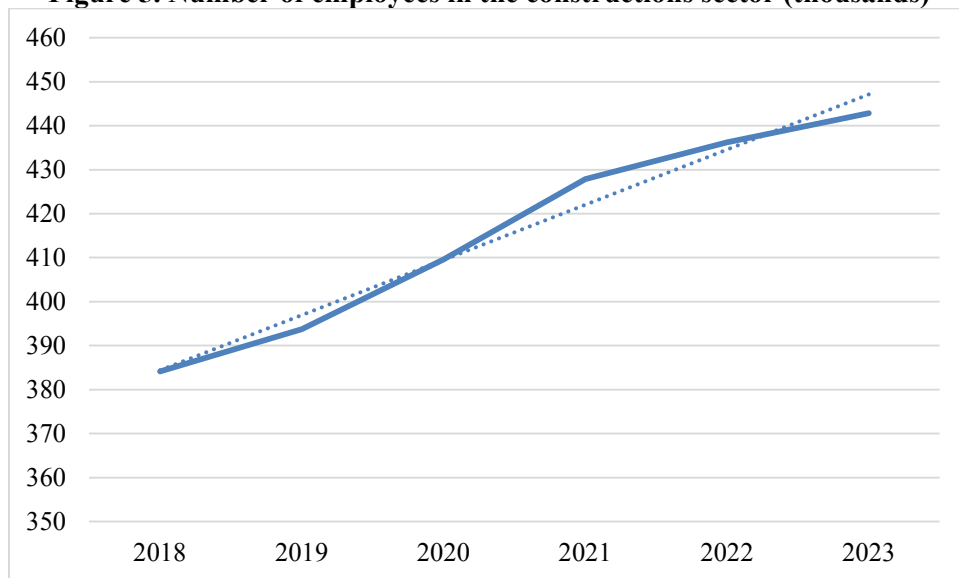
Figure 4. Contribution of the constructions sector to the total GDP



Source: Authors' own research contribution based on the data retrieved from National Institute of Statistics.

The constructions sector has been a significant contributor to Romania's economy, with percentages in the total GDP ranging from 15.5% to 16.7% from the first quarter of 2018 to the second quarter of 2023. As illustrated in the line chart above, the value added from this activity field was not constant throughout the last years as there has been drop of 3.15% before the implementation of tax incentives in 2019, followed by another significant decline of 3.57% in 2020. The contribution of construction in the total GDP continued to decrease in 2021, but only by 0.48% and it surged considerably by 4.5% in 2022, only to fall by 3.95% by the second half of 2023.

Figure 5. Number of employees in the constructions sector (thousands)

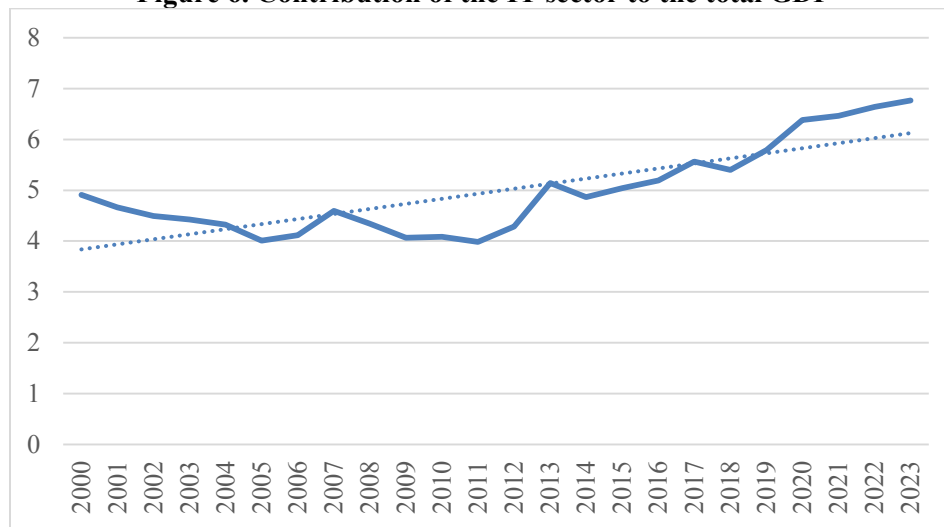


Source: Authors' own research contribution based on the data retrieved from National Institute of Statistics.

There was a spectacular growth in the number of employees in the constructions sector in Romania, from 384,000 to 445,000, which represents an increase of 15.83% from the beginning of 2018 to the first half of 2023.

Even though the positive impact of the implementation of fiscal facilities can be easily observed, a recent study by the Federation of Employers of Construction Societies in Romania has stated that the number of Romanian employees working in constructions outside of the country in the European Union is over 700,000. The elimination of fiscal facilities for employees working in the construction sector will accelerate the emigration trend in the field, as the net salaries decrease and employers reduce their operational activity. Another aspect worth considering is legislative predictability, as the tax incentives should have been in force until 2028, which could have helped to stabilize the sector and reduce labour emigration.

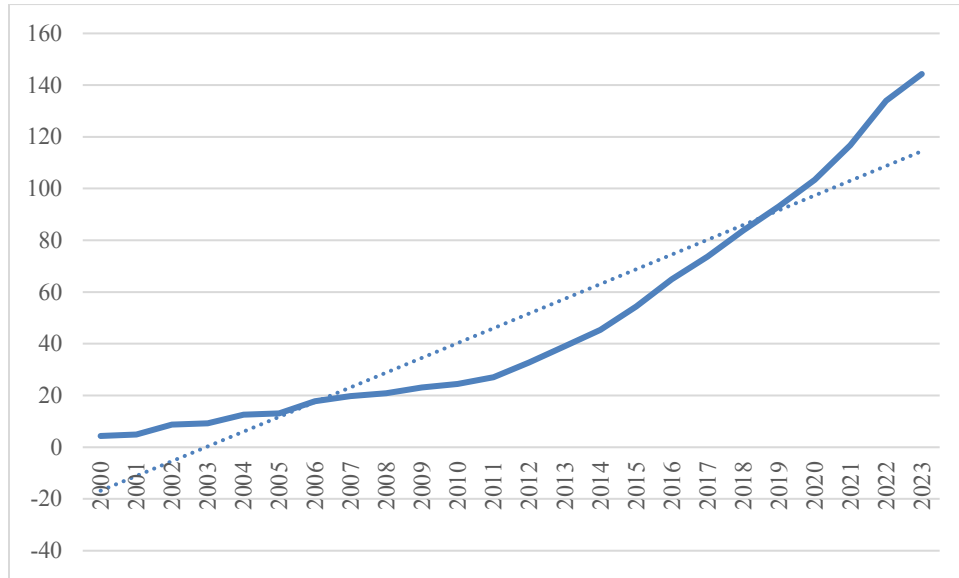
Figure 6. Contribution of the IT sector to the total GDP



Source: Authors' own research contribution based on the data retrieved from National Institute of Statistics.

Romania's IT sector has had a spectacular evolution over the past two decades. Its contribution to the total GDP fluctuated throughout the years while maintaining an ascendent trend with a rise of 37.92%, ranging from 4.91% in 2000 to 6.77% in the first two quarters of 2023. The rise of the IT field attracted foreign investment and encouraged competitiveness on the global market, resulting in an important improvement for the country's economy.

Figure 7. Number of employees in the IT sector (thousands)



Source: Authors' own research contribution based on the data retrieved from National Institute of Statistics.

Romania is the leader in Europe, and sixth in the world, in terms of the number of certified IT specialists. In 2000, one year before the introduction of fiscal facilities for the IT sector, the number of employees in the field was an averaging 4,367, rising each year to a peak of 144,300 in the first half of 2023, concluding a huge increase of 3,204% over the last two decades. The linear chart above illustrates the sharpest rise starting 2011.

As a result, it may be regarded as certain that the elimination of fiscal facilities will have a negative impact for this industry. The possibility of working remote makes changing jobs for the IT specialists even easier, affecting mostly local businesses, as multinationals can easily relocate their IT department. A fiscal measure for such an important field that is in a continuous development should be implemented with more caution, as it can affect a main strategic resource that imposed itself internationally.

2. Analysis of the impact of legislative changes

As outlined before, the analysis of the IT sector was conducted from three perspectives. Thus, the regression equations will take the following forms:

Table 5. Regression equations

Model	Regression equation
1	
2	
3	

Source: Authors' own research contribution based on the data retrieved from Stancu (2011).

y_1 – dependent variable (number of employees)

y_2 – dependent variable (labour productivity)

y_3 – dependent variable (% of GDP)

x_1 – independent variable (mean salary)

a, b – unknown parameters of the regression function

ε – error term (residue) - random variable

Table 6. Results of the regression analysis

Model	Dependent variable	Variables	Coefficient	R-squared	Prob	Prob (F-statistic)	DW
1	Number of employees	Mean salary	0.020674	0.97206	0.000000	0.000000	0.168857
		c	59.447670		0.000000		
2	Labour productivity	Mean salary	0.010073	0.93272	0.000000	0.000000	0.320235
		c	22.925600		0.000000		
3	Percentage of GDP	Mean salary	0.000003	0.80233	0.000000	0.000000	0.335533
		c	0.037669		0.000000		

Source: Authors' own research results using EViews 12.

First results of the regression analysis indicate values of the Durbin-Watson test that are significantly greater than 2, which suggest positive autocorrelation in the residuals. Due to the fact that the data used exhibits a constant increase over time, autocorrelation occurs because each observation is related to the previous one due to the trend. In order to correct this, lagged values of the dependent variable were included into the regression model to improve its ability to capture temporal dependencies.

Table 7. Results of the regression analysis with lagged variables

Model	Dependent variable	Variables	Coefficient	R-squared	Prob	Prob (F-statistic)	DW
1	Number of employees	Mean salary	0.020674	0.99802	0.891122	0.000000	1.628968
		c	59.447670		0.765580		
2	Labour productivity	Mean salary	0.010073	0.98112	0.000330	0.000000	2.389206
		c	22.925600		0.000567		
3	Percentage of GDP	Mean salary	0.000003	0.94205	0.003223	0.000000	2.364846
		c	0.037669		0.006757		

Source: Authors' own research results using EViews 12.

The results have indicated a positive relationship between the independent variable and dependent variables, as indicated by the positive values recorded by the coefficients of variables b. The most significant relationship is observed between the numbers of employees and mean salary. Therefore, an improvement of the compensation, granted by the introduction of tax incentives, will increase the number of employees by 0.020674.

The coefficient of multiple determination (R^2) has significant values, indicating a strong relationship between the independent and dependent variables. Thus, the mean salary explains the number of employees in proportion of 99.80%, the labour productivity in proportion of 98.11% and the percentage of GDP of the IT field in proportion of 94.21%.

Table 8. Correlation using Pearson coefficient

	Mean salary	Number of employees	Labour productivity	Percentage of GDP
Mean salary	1			
Number of employees	0.985930847	1		
Labour productivity	0.966161135		1	
Percentage of GDP	0.895729906			1

Source: Authors' own research results using EViews 12.

The strength and direction of the relationship between variables was also determined using the Pearson coefficient. The results indicated strong positive linear relationships, with the output for the mean salary and the number of employees being close to 1.

Ultimately, the hypothesis that the implementation of fiscal facilities in the IT sector helped it become one of the leading IT hubs in Eastern Europe and contributed significantly towards the country's overall economy, is confirmed.

Conclusion

Following the analysis, agriculture and constructions sectors encountered an increase in employment, but not necessary in the percentage of the gross domestic product. In order to stabilize these industries, the income tax incentives should be enforced for a longer period of time.

The IT sector had a spectacular growth over the last two decades, with an increase in both employment and percentage of GDP that can also be attributed to the implementation of fiscal facilities. The regression analysis reveals that the mean salary explains the number of employees in proportion of 99.80%, the labour productivity in proportion of 98.11% and the percentage of GDP of the IT field in proportion of 94.21%. Pearson coefficients indicated strong positive linear relationships between the variables. It is vital that the Romanian Government will take the necessary measures in order to avoid destabilizing the sector, as the IT industry plays a crucial role in the country's economy, creating jobs, innovation and economic growth.

While this study aimed to investigate the impact of the fiscal changes for activity fields that benefited from tax incentives, several limitations need to be acknowledged. The number of observations is limited due to reporting frequency, the data regarding the gross domestic product being published quarterly, while the fiscal facilities granted by the Romanian legislation targeted a narrow time horizon. Furthermore, the research does not fully explore the other potential socioeconomic factors influencing the evolution of these sectors that are not related to tax exemptions, such as the COVID-19 pandemic or the war between Russia and Ukraine. Despite these limitations, this study provides an insight on the future of agriculture, constructions and IT in Romania, identifying a pathway for subsequent research exploration.

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