



Julia Yereshko

## INVESTIGATING THE FISCAL MOTIVE OF STATE INCENTIVES FOR INNOVATIVE AND INVESTMENT ACTIVITY

*The object of research is the state as an economic agent of innovative development. The analysis of scientific achievements on the issue of the state innovation and investment activity stimulation and the study of the state from the standpoint of the innovative development subject forms a fairly clear idea about the mechanisms of activation of them both, at the same time, the motives for the state to stimulate innovation remain not fully covered.*

*The state itself is not interested in stimulating the innovation and investment processes and in transition to sustainable development. This interest is mediated, as for any other economic agent, by imbalance and/or obtaining additional economic effect in the form, for example, budget expenditures reduction; tax revenues growth, managerial staff optimization, etc. And, crucialness of purely liberal nature of any controlled influence on the system mediates that state regulatory activity should be based on the economic benefit of the agent, as opposed to the political motives of nominal adherence to the generally accepted course of development.*

*Well-known trajectories and patterns of administrative and economic activity of the state give grounds to assume the following main economic motives for stimulating the innovation process:*

- increase in tax revenues (fiscal motive);
- reducing the burden on the budget;
- GDP growth;
- increasing the country's competitiveness;
- optimization of administrative costs and management staff;
- attracting program financing and investments.

*Prominent among which is the increase in tax revenues or fiscal motive. It can result in several areas:*

- from the standpoint of additional taxes due to the increase in effectiveness of legal entities innovative activity – the expansion of business activities; types and volumes of sales of products and services; increase in the number of enterprises; increase in the cost of sold products; profitability, etc.;
- from the standpoint of additional taxes due to better development of the workforce – higher employment; higher wages, etc.

**Keywords:** *sustainable development, innovative development, innovation and investment activities, government incentives, government policy, innovation policy.*

Received date: 21.01.2021

Accepted date: 17.03.2021

Published date: 30.06.2021

© The Author(s) 2021

This is an open access article

under the Creative Commons CC BY license

### How to cite

Yereshko, J. (2021). Investigating the fiscal motive of state incentives for innovative and investment activity. *Technology Audit and Production Reserves*, 3 (4 (59)), 51–54. doi: <http://doi.org/10.15587/2706-5448.2021.235412>

### 1. Introduction

Based on the previously substantiated role of the state in the human-centric sustainable development paradigm, it is necessary to study the imperatives and determinants of its activity in the formation of key development resource, namely – human consciousness, manifested in the form of intellectual capital, to formulate theoretical and methodological foundations for the state's innovation policy, on the basis of avoiding the sustainable development aberrations. As well as meeting the identified requirements for the implementation of innovations, namely: their necessity, compliance with the needs of a particular economic system

and the possibility of their perception by this system. At the same time, emphasizing the crucialness of an exclusively liberal nature of any controlled influence on the system, state regulatory activity should be based on the economic benefit of this agent, as opposed to the political motives of nominal adherence to the generally accepted course of development. After all, those are exactly the economic motives, that contribute to the effectiveness of this process, rather than its imitation and/or use as a lever of influence and bureaucratization of the system due to hypertrophy and hyperbolization of sustainable development goals to please some political forces. Thus, the state itself is not interested in stimulating the innovation

and investment processes and in transition to sustainable development – this interest is mediated, as for any other economic agent, by imbalance and/or obtaining additional economic effect in the form, for example, budget expenditures reduction; tax revenues growth, managerial staff optimization, etc.

The analysis of scientific achievements on the issue of the state innovation and investment activity stimulation and the study of the state from the standpoint of the innovative development subject [1–3] forms a fairly clear idea about the mechanisms of activation of them both, at the same time, the motives for the state to stimulate innovation remain not fully covered.

Hence, *the aim of research* is to substantiate the economic motives for the state to stimulate innovation and investment activities and, in particular, fiscal one, which will allow to form the liberal foundations for this process from the standpoint of its true effectiveness. *The object of research* is the state as an economic agent of innovative development.

## 2. Methods of research

The research was carried out using the following scientific methods:

- method of analysis in the study of the fiscal motive components for the state stimulation of innovation and investment activities;
- methods of statistical analysis, comparison, logical extrapolation and forecasting in the study of the tax effect due to increase in the effectiveness of innovation activity by economic entities;
- hypothetical-deductive method in substantiating the fiscal motive for the state stimulation of innovation and investment activities.

## 3. Research results and discussion

The studied sources and well-known trajectories and patterns of administrative and economic activity of the state give grounds to assume the following main economic motives for stimulating the innovation process:

- increase in tax revenues (fiscal motive);
- reducing the burden on the budget;
- GDP growth;
- increasing the country's competitiveness;
- optimization of administrative costs and management staff;
- attracting program financing and investments.

Prominent among which is the increase in tax revenues or fiscal motive. It can result in several areas:

- from the standpoint of additional taxes due to the increase in effectiveness of legal entities innovative activity – the expansion of business activities; types and volumes of sales of products and services; increase in the number of enterprises; increase in the cost of sold products; profitability, etc.;
- from the standpoint of additional taxes due to better development of the workforce – higher employment; higher wages, etc.

Thus, according to the Organization for Economic Cooperation and Development (OECD), the public benefit of financing education exceeds the cost of education by increasing tax revenues from more skilled labour: in general, in OECD countries, the growth rate of «social taxes» is 6 % for men and 3 % for women (Fig. 1).

Governments reimburse education-related costs through additional tax revenues and social contributions from higher-paid workers, who often have higher levels of education. On average, the total amount of state payments is 83,000 USD for a man with a secondary education as the highest achievement. The amount can be broken down into income tax effects (54,600 USD) and social tax effects (28,400 USD). For women with secondary education, government benefits average in 49,600 USD, consisting of the effect of income tax – 29,100 USD and the effect of social taxes – 20,500 USD. Among the OECD countries, Austria and Denmark receive the largest total state benefits from secondary and special education from men (over 150,000 USD), and Denmark and Germany receive the largest benefits from women's education (over 100,000 USD). On average, in OECD countries, every USD that governments invest in secondary education brings reimburse of 2.2 USD to the public from men and 1.4 USD from women. For higher education: on average, the total amount of tax revenues is 199,900 USD for a man (including income tax – 144,300 USD and social security contributions – 55,600 USD) and 125,200 USD for women (consisting of income tax – 83,900 USD and social security contributions – 41,300 USD). Among the OECD countries, Ireland and Luxembourg have the highest aggregate government revenues from men with higher education (over 400,000 USD), and Belgium and Luxembourg have the highest total revenues from women with higher education (240,000 USD) [4].

The tax effect of innovation and implementation of R&D by the private sector could potentially be represented by statistics on the increase in their value added and income as a result, and hence future increase in tax revenues (Fig. 2, Table 1).

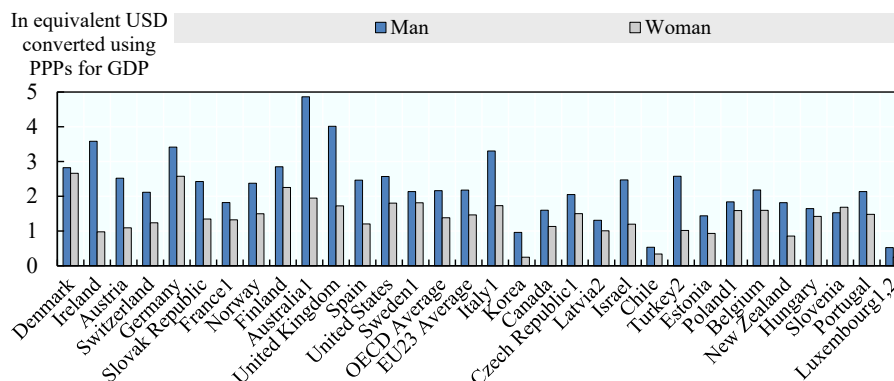


Fig. 1. Public financial benefits for each USD (in equivalent) invested in complete secondary education [4]

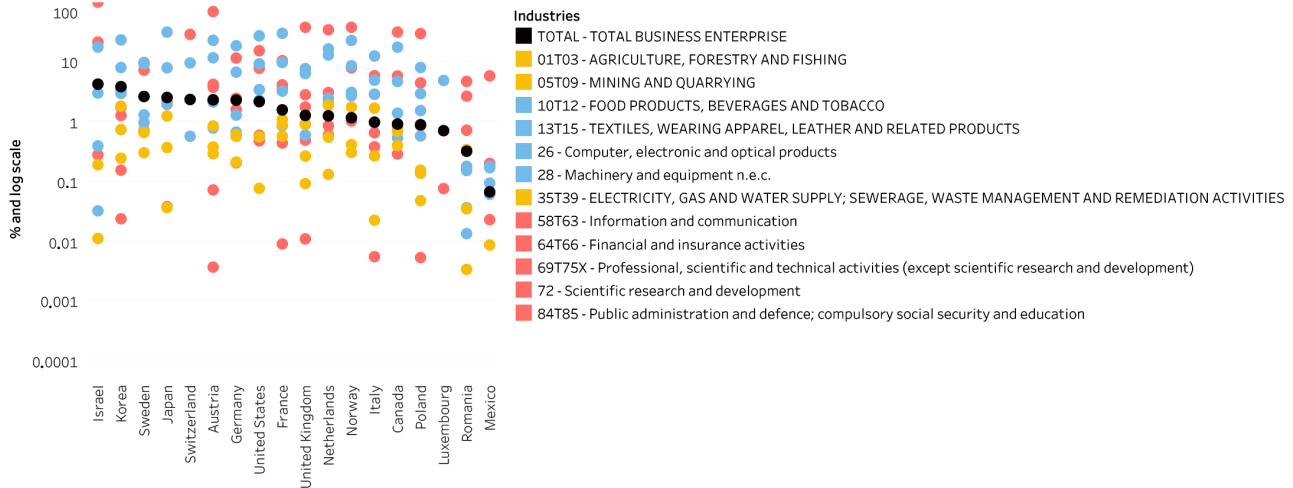


Fig. 2. R&D intensity by industry, 2018 (as a percentage of gross value added, log scale) [5]

Table 1

15 largest corporate investors in R&D in the world 2012–2018 [6]

Rank (2018)	Company Name	State	Industry	R&D expenditure, billions USD		Revenues, billions USD		R&D intensity, %	
				2012	2018	2012	2018	2012	2018
1	Amazon Inc.	USA	Retail	2.9	22.6	48.1	177.9	6.1	12.7
2	Alphabet Inc.	USA	Software	5.2	16.2	37.9	110.9	13.8	14.6
3	Volkswagen	Germany	Automotive	8.7	15.8	151.3	277.0	4.5	5.7
4	Samsung Electronics Ltd	South Korea	Electronics	9.3	15.3	154.5	224.3	6.0	6.8
5	Intel Corp.	USA	Semiconductors and processors	8.4	13.1	54.0	62.8	15.5	20.9
6	Microsoft Corp.	USA	Software	9.8	12.3	69.9	90.0	14.0	13.7
7	Apple Inc.	USA	Semiconductors and processors	2.4	11.6	108.2	229.2	2.2	5.1
8	Roche Holding AG	Switzerland	Pharmaceuticals; biotechnology	8.5	10.8	45.3	57.2	18.9	18.9
9	Johnson&Johnson	USA	Pharmaceuticals; biotechnology	7.5	10.6	65.0	76.5	11.6	13.8
10	Merk&Co. Inc.	USA	Pharmaceuticals; biotechnology	8.5	10.2	48.0	40.1	17.6	25.4
11	Toyota Motor Corp.	Japan	Automotive	7.3	10.0	178.8	259.8	4.1	3.9
12	Novartis AG	Switzerland	Pharmaceuticals; biotechnology	10.2	8.5	59.4	50.1	17.1	17.0
13	Ford Motor Comp.	USA	Automotive	5.3	8.0	135.6	156.8	3.9	5.1
14	Facebook Inc.	USA	Software	0.4	7.8	3.7	40.7	10.5	19.1
15	Pfizer Inc.	CIIA	Pharmaceuticals; biotechnology	9.1	7.7	61.0	52.5	14.9	14.6

The data in Table 1 illustrates a clear correlation between R&D investment by corporations and their level of income. It is possible to assume that the incremental growth of the latter means a similar increase in tax revenues of innovative companies to the state budget. At the same time, amid the economic and humanitarian crisis caused by the COVID-19 pandemic, EU leaders agreed to introduce a «digital tax» in 2021 as one of the steps to «reassess how technical titans pay taxes» [7].

The impetus for this was the French government’s plans to introduce a 3 % income tax from January 1 2021, which companies receive from the provision of digital services to French users, which officials estimate will add more than 500 million euros to the country’s budget. Similar taxes are being considered in the UK, Italy, Canada and many other wealthy countries [8]. The OECD is considering a two-component strategy to collect the «digital fee»:

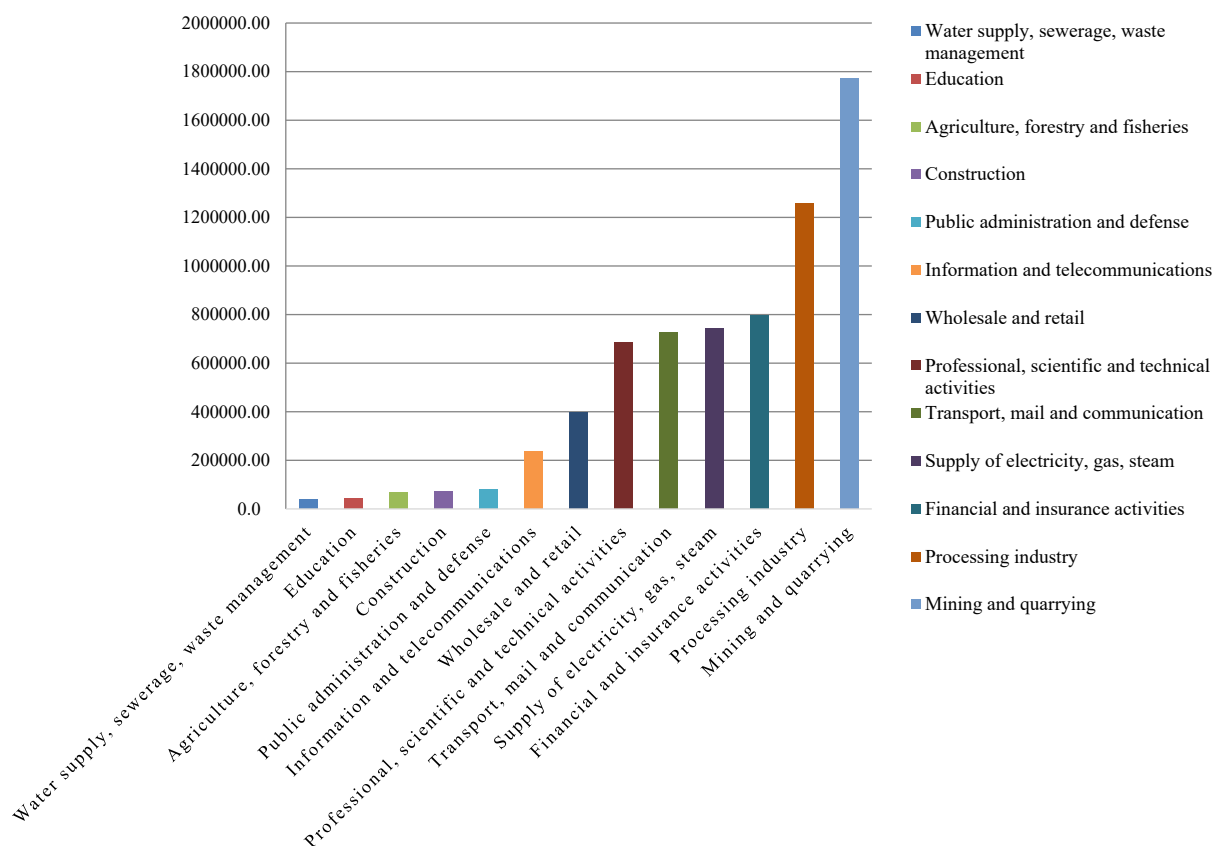
- one element is to change the way companies demonstrate their presence in the country, which particularly affects industries with new business models based on data rather than physical plants;
- the second element addresses the issue of minimum taxation to ensure territorial taxation of corporate profits

and not exempt it from all jurisdictions (similar to the US Intangible Income Tax Regime (GILTI) introduced in 2017, which sets a minimum level of taxation for such type of companies).

OECD estimates, that proposed changes combined with the US GILTI regime will lead to new tax revenues totalling about 100 billion USD per year, representing about 4 % of the global corporate income tax [7].

From Figs. 2, 3, there is a fairly clear correlation of leading industries in the intensity of research and development in OECD countries and industries with the largest taxpayers in Ukraine, which suggests the possible increase in tax revenues as a result of innovation and research activities intensification by such enterprises.

By the way, the leader in the amount of VAT transferred to the budget (including budget reimbursement) for goods and services produced in Ukraine) is the «Professional, scientific and consulting activities» – end users had paid to the consolidated State Budget of Ukraine almost 23 % VAT from goods of domestic origin for the consumption of products and services provided by the enterprises of mentioned industry.



**Fig. 3.** Revenues from the 20 largest taxpayers in Ukraine by industry, thousand USD (built by the author based on [9])

At the same time, the leadership in this indicator is provided by a single enterprise, namely: JSC NJSC «Nafto-Gas of Ukraine», which accounts for more than 93 % of all VAT in subsector, because according to the classifier of economic activities (NACE), the company is accounted for as «the main departments (head offices)», which belongs to the section «Professional, scientific and technical activities» [10].

#### 4. Conclusions

The study allowed statistical and empirical substantiation of the fiscal motive and forecasting the fiscal effect of state stimulation of innovation and investment activities on the basis of sustainable development and liberalism, which will further update the directions and object structure of government innovation policy.

Crucialness of purely liberal nature of any controlled influence on the system mediates that state regulatory activity should be based on the economic benefit of the agent, as opposed to the political motives of nominal adherence to the generally accepted course of development.

The prospect for further research is to analyse the spectrum of economic motives of the state as the basis for the formation of a liberal innovation policy based on avoiding aberrations of sustainable development and meeting the identified requirements for the implementation of innovations, namely: their necessity, compliance with the needs of a specific economic system and the possibility of their perception by this system.

#### References

1. Scotchmer, S. (2004). *Innovation and incentives*. MIT press, 376. Available at: <https://mitpress.mit.edu/books/innovation-and-incentives>

2. Sunny, S. A., Shu, C. (2017). Investments, incentives, and innovation: geographical clustering dynamics as drivers of sustainable entrepreneurship. *Small Business Economics*, 52 (4), 905–927. doi: <http://doi.org/10.1007/s11187-017-9941-z>

3. Moretti, E., Wilson, D. J. (2014). State incentives for innovation, star scientists and jobs: Evidence from biotech. *Journal of Urban Economics*, 79, 20–38. doi: <http://doi.org/10.1016/j.jue.2013.07.002>

4. Indicator A5. What are the financial incentives to invest in education? (2020). *OECD*. Available at: <https://www.oecd-ilibrary.org/sites/68460537-en/index.html?itemId=/content/component/68460537-en>

5. Detailed ANBERD data analysis of business R&D expenditure across industries (2021) *OECD*. Available at: <https://www.oecd.org/innovation/inno/anberdanalyticalbusinessenterprisere-searchanddevelopmentdatabase.htm>

6. Global Innovation 1000 study (2018) *PWC network. Strategy &.* Available at: <https://www.strategyand.pwc.com/gx/en/insights/innovation1000.html>

7. Christie, R. (2021). Taxing Tech. *International Monetary Fund*. Available at: <https://www.imf.org/external/pubs/ft/fandd/2021/03/taxing-big-tech-and-the-future-of-digital-services-tax-christie.htm>

8. How Tech Taxes Became the World's Hottest Debate (2020). *NY Times*. Available at: <https://www.nytimes.com/2020/01/23/business/tech-taxes-debate.html>

9. HALUZI: TOP-20 (2019). *Visnyk. Ofitsiyno pro podatky*, 9–10. Available at: <http://www.visnuk.com.ua/uploads/media/file/2019/08/28/b96de4824cb0b7f7ff5686c6f80cdc297642d4b9.pdf>

10. Yaka haluz ekonomiky splatyla naibilshe nepriamykh podatktiv? (2019). *Cost.ua*. Available at: <https://cost.ua/768-yaka-haluz-ekonomiky-splatyla-naybilshe-nepriamykh-podatktiv/>

*Julia Yereshko, PhD, Associate Professor, Department of Theoretical and Applied Economics, National Technical University of Ukraine «Igor Sikorsky Kyiv Polytechnic Institute», Kyiv, Ukraine, e-mail: [julia.yereshko@gmail.com](mailto:julia.yereshko@gmail.com), ORCID: <https://orcid.org/0000-0002-9161-8820>*